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THE UNIVERSITY OF ALBERTA

PREGNANCY IN ADOLESCENCE AND MOTHER-DAUGHTER COMMUNICATION

by

©

BONNIE F. HAAVE

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH

IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE

DOCTOR OF PHILOSOPHY

DEPARTMENT OF EDUCATIONAL PSYCHOLOGY

EDMONTON, ALBERTA

FALL 1986

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Supervisor

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V. R. Nyberg

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External Examiner

Date: May 2, 1986

DEDICATION

This work is dedicated to my parents, Bernice and Earle Erickson, who transmitted their life philosophy to me - to live as you believe, to approach life with hope and a positive attitude, to learn and to grow each day, and most of all to forgive, accept and love others.

This work is also dedicated to my grandma Erickson who encouraged me to dream and to believe that I could accomplish that dream with strength and determination.

ABSTRACT

The purpose of this study was to examine the relationship between effective mother-daughter communication about sexuality and adolescent pregnancy. Daughters who had experienced a pregnancy and their mothers were compared with daughters who had not experienced a pregnancy and their mothers with regard to (A) factors identified in the literature as risk factors for adolescent pregnancies including age, education, family composition, birth order, sexual knowledge and others such as the age of the onset of dating, spontaneity, sources of sexual information, and sex education classes; (B) agreement between mothers and daughters concerning their communication about sexuality, and (C) differences between the two groups regarding communication about sexuality. The sexual components of effective mother-daughter communication examined included: number of discussions, timing (before or after the sexual behavior), initiator of the discussion, reason (result of a problem), personal and perceived comfort level of the mother or daughter, and assertiveness.

Mothers and daughters (aged 12-18) were administered the modified Fox Sexual Communication Questionnaire, the modified Foothills Sexual Knowledge Questionnaire, and the Rathus Assertiveness Schedule. One hundred and thirty questionnaires were suitable for analysis.

Analysis of the data indicated that daughters who had not experienced a pregnancy and their mothers tended to be younger, better educated, and less knowledgeable about sexuality. These daughters began dating at an older age and reported their mother as their major source of sexual information. With regard to agreement between mothers and daughters concerning their communication about sexuality, daughters who had not experienced a pregnancy and their mothers tended to be in agreement about the amount, timing, the initiator, the reason, and their own personal comfort and the perceived comfort level of the other discussing sexual topics. With regard to mother-daughter communication about sexuality, daughters who had not experienced a pregnancy and their mothers reported discussing dating and boyfriends and birth control more frequently. They also discussed menstruation and sexual intercourse before the daughter was involved in the sexual behavior. Sexual discussion as the result of a problem was less frequent. More comfort in discussing dating and boyfriends, sexual intercourse and contraception, and a higher level of the other's perceived comfort discussing sexual intercourse, conception and morality was also noted. Although there was a correlation between mothers' and daughters' responses, there were no differences between groups with regard to assertive communication.

These results concur with other research in this area, and consequently it was recommended that mother-daughter communication about sexuality and its relationship to the risk for an adolescent pregnancy should be investigated further. Programs should be set up to teach effective communication skills for the transmission of sexual information and values from mothers to their daughters to develop positive communication patterns and thus reduce the risk of an adolescent pregnancy.

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CHAPTER I

INTRODUCTION TO THE STUDY

The results of numerous studies and surveys have indicated that pregnancies in adolescence continue to generate problems. These problems are multifaceted and affect almost every aspect of the adolescent's life. Approximately 5 in every 100 adolescent girls living in Alberta become pregnant each calendar year (Meikle, Pearce, Peitchinis & Pysh, 1980). Professionals in the fields of education, psychology, medicine, social work and sociology have documented concerns about adolescent pregnancies (Chilman, 1980; Delamater & MacCorquodale, 1978; Koenig & Zelnik, 1982; Landy, 1983; McKendry, Walters & Johnson, 1979; Meikle, Pearce, Peitchinis & Pysh, 1981; Phipps-Yonas, 1980; Schlesinger, 1975; Zelnick & Kantner, 1977).

Adolescent pregnancies have repercussions for the adolescent, the child, her family, the government, and society as a whole. The adolescent and her unborn child are at risk medically (Baldwin, 1980; Green & Poteteiger, 1978; Hutchins, Kendall & Rubins,1979; Jorgensen, 1980; Nye, 1976; Phipps-Yonas, 1980; Poliner, 1980); psychologically (Chillman, 1980; Jekel, Tyler, Gabrielson, Bancroft & Klerman, 1973; Kellam, 1979; Narvez, 1977; Phipps-Yonas, 1980); intellectually (as a result of the adolescent girl's educational disruption) (Dworkin & Poindexter, 1980; Hendrixon, 1979; McCarthy & Radish, 1982; McKendry, Walters & Johnson, 1979; Russ-Eft, Springer & Beever, 1979; Zellman, 1982); and economically (Abel, Jackson, Fein, Al-Sagaf & Shuster, 1982, Dillard & Pol, 1982; Goodman, 1979; Moore, Hofferth & Wertheimer, 1979; Phipps-Yonas, 1980; Presser, 1980; Walters & Walters, 1980; Zellman, 1982).

The adolescent confronted with a pregnancy has few available options, and all present a dramatic interruption in her physical, cognitive, emotional, and social development. Considering the negative consequences, prevention of the pregnancy of an adolescent is the goal of concerned professionals.

The mother-daughter relationship is an important influence in the life of the adolescent girl, where a close, loving relationship is usually associated with a lower risk of an unwanted adolescent pregnancy. Typically the daughter learns basic sex roles from her mother and models her mother's behavior and attitudes. It is unfortunate that many mothers find sexual discussion difficult and therefore tend to avoid discussion of this area of their daughter's life, even if they otherwise have a positive relationship. Research with adolescents (Bennett & Dickinson, 1980; Juhasz, 1980) has indicated that the mother is the preferred, if not the actual, source of sexual knowledge, making the mother-daughter relationship a central factor in adolescent sexual education.

The ability of a mother to transmit sexual knowledge and responsibility effectively is obviously related to her communication skills. Effective communication is important for responsible sexual behavior on the part of the adolescent and tends to lower the risk of a pregnancy occurring, as the adolescent tends to be better informed and better able to plan for sexual behavior. Generally, a daughter tends to imitate the communication patterns of her mother, giving the mother the responsibility to be an effective model in this area (Yalom, et al., 1982). The mother also needs to use this communication pattern to transmit sexual knowledge.

Research (Chillman, 1980; Phipps-Yonas, 1980) has been undertaken to identify the adolescent female at risk for a pregnancy. The consensus of the researchers is that there is no unique profile of the adolescent female at risk; thus girls who get pregnant are not notably different from those who do not. This lack of observable difference accentuates how important it is for every adolescent female to receive accurate sexual knowledge and guidance, communicated in an honest, open, appropriate, and assertive manner. Assertive communication skill training has been demonstrated to be effective with both women (Schinke, et al., 1979) and female adolescents (Vaal & McCullagh, 1977) in a variety of settings. Consequently it could be assumed that effective communication skills can be taught to mothers in the area of sexuality so they can transmit sexual knowledge and guidance to their daughters in a positive manner.

PURPOSE

This study was designed to examine the relationship between pregnancy in adolescence and effective mother-daughter communication about sexuality. Sexual components of effective mother-daughter communication about sexuality were examined including: number of discussions, timing (before or after the sexual behavior), initiator of the discussion, reason (result of a problem), personal and perceived comfort level of the mother or daughter and assertiveness. Daughters who had experienced a pregnancy and their mothers were compared with daughters who had not experienced a pregnancy and their mothers with regard to (A) factors identified in the literature as risk factors for adolescent pregnancies including age, education, family composition, birth order, sexual knowledge and others such as the age of the onset of dating, spontaneity, sources of sexual information, and sex education classes; (B) agreement between mothers and their daughters concerning their communication about sexuality; and (C) differences between the two groups regarding communication about sexuality.

Daughters who had experienced an adolescent pregnancy and their mothers as well as daughters who had not experienced a pregnancy and their mothers were asked to complete questionnaires anonymously. These questionnaires were then assessed to ascertain differences in the two groups regarding risk factors, agreement regarding communication about sexuality between mother and daughter, and differences between the two groups regarding sexual communication patterns between mothers and their daughters.

A review of the literature revealed that although numerous factors have been studied in relation to adolescent pregnancies, no study has focused specifically on assertive mother-daughter sexual communication and its relationship to adolescent pregnancies. Fox and Inazu (1978, 1980) studied components of mother-daughter communication patterns and emphasized the importance of positive sexual communication between mother and daughter for the optimum development of the young female. Since each adolescent grows and develops at her own individual rate, consistent and continued access to sexual knowledge and guidance was considered crucial for the teenager. It was postulated that this can best be provided by the girl's mother through the use of effective communication skills.

Fox and Inazu (1980) concluded that mother-daughter communication was facilitated by a more comprehensive understanding of the underlying motives and problems of sexual communication. The purpose of this study was to add to the body of knowledge regarding mother-daughter sexual communication as well as to explore the relationship between mother-daughter communication about sexuality and the daughters' experience of an adolescent pregnancy.

DEFINITIONS

Adolescence

Adolescence is defined as the developmental period beginning with pubescence (the physical changes that result in sexual maturity) and ending with adulthood, associated with the ages between 11 or 12 to 20 years (Lefrancois, 1976). The central variable is the onset of puberty, as it is the most pronounced developmental stage in the life cycle. During this time, growth of primary and secondary sexual characteristics occurs accompanied by the emotional and social realities surrounding this sexual development. Adolescent development includes physical, cognitive, emotional and social changes, making this stage a transition period between childhood and adulthood when the individual is weaned from childish traits and is prepared for the responsibilities of adulthood (Mitchell, 1971, 1975).

Assertive Communication

Assertive communication is defined as: expressing feelings, beliefs, and opinions in an honest, direct, open, and appropriate manner (Jakubowski-Spector, 1973; Lange-Jakubowski, 1976); the proper expression of any emotion towards another person (Wolpe, 1973); open, honest, direct, and appropriate communication with friends and family, the freedom to reveal oneself through words, making "I" statements (Fensterheim and Baer, 1975); the ability to say "no," make requests, express negative as well as positive feelings, and initiate, continue, and complete a conversation (Lazarus, 1971).

Mother-Daughter

For the purpose of this study, a mother-daughter relationship included biological mother-daughter relationships as well as situations where the adolescent girl lived with a female whom she considered a mother figure.

Adolescent Pregnancy

An adolescent pregnancy was defined as a pregnancy experienced by a female aged between 12 and 18 years irrespective of whether or not it was planned.

Mother and Daughter Groups

For the purposes of this study, it is assumed that all but adoptive or step mothers have experienced a pregnancy, thus the phrases mothers and daughters who have experienced, or have not experienced, a pregnancy refer to a pregnancy in adolescence of the daughter. To clarify the different groups, the mothers and daughters will be refered to as groups.

Group 1 is the daughters who have experienced a pregnancy in adolescence and their mothers.

Group 3 is the daughters who have not experienced a pregnancy in adolescence and their mothers.

Group 2 is adolescent girls from Woodside who have experienced a pregnancy in adolescence but whose mothers did not respond to the questionnaires

Group 1C is all of the daughters who have experienced a pregnancy in adolescence.

Group 3C is all of the daughters who have not experienced a pregnancy in adolescence.

CHAPTER II

RELATED LITERATURE

Adolescence is a period of dramatic physical growth and psychological change. As the individual passes through this stage of development, an increase in sexual activity is noted. By middle adolescence (approximately 13 to 15 years of age for girls) sexuality is an important part of teenage life (Mitchell, 1979). A number of theorists have described and explained the adolescent developmental years with physical, intellectual, emotional, and social points of reference. During this period, the family continues to have a pronounced impact on the adolescent.

In this study, the focus is on the mother-daughter relationship and the importance of effective communication about sexuality between mother and daughter. A significant possible result of female adolescent sexual maturity is a pregnancy in adolescence. Considerable research has been done in an attempt to ascertain factors which may increase the risk of the occurrence of pregnancy. Although there are many factors which may or may not be related to the occurrence of adolescent pregnancies, this study focused on a few of the risk factors and the importance of effective communication about sexuality between mother and daughter. The mother is a constant and influential model for her daughter, giving her the primary opportunity to influence her daughter's sexual behavior.

ADOLESCENCE

Physical Changes

Adolescence is universally recognized as a period of dramatic physical growth and change. This rapid biological growth leads to an intensified interest in sexual behavior on the part of the adolescent. After the onset of puberty, specifically menstruation, a young girl must be considered a woman, capable of reproduction (Mitchell, 1971). One of the developmental tasks of the adolescent as listed by Havighurst (1953) is the acceptance of a new physical body. This acceptance of a dramatically different body often leads to self-consciousness as a young adolescent grows toward sexual maturity. This physical change also leads to experimenting with and learning of new, sexually appropriate behaviors in peer groups. Conflicts in the models and messages of society make the achievement of the adolescent's developmental task of accepting a new physical body, as it relates to sexual behavior, challenging for the young female.

Cognitive and Emotional Changes

The intellectual development of the adolescent has been described by Piaget (1950, 1963, 1972, 1973) in terms of accommodating and assimilating new schemes into already learned behavior. Piaget theorized that the concrete operations period of development was from approximately the age of seven to 11 years. During this period, the child performs operations related to concrete objects, develops a more objective view of the world, better understands the perceptions of others, and develops a more mature concept of causation, all of which are necessary for understanding and making decisions involving sexual behavior. By the ages of 11 to 15 years, the adolescent is in the formal operations period of cognitive development where she can visualize a problem, develop hypotheses, make deductions, and think logically. The adolescent has less experience and fewer complex schemes than the adult, and has some lingering egocentricism. The peer group interaction is important in this stage of development, because the adolescent has not fully developed abstract principles and social norms (Biggs, 1976). The adolescent tends to live in her abstract, imagined future, displaying an advanced egocentricism that leads to the belief that she is constantly under observation and that she can transform her reality through ideas (Lefrancois, 1976). The adolescent female thus tends to be self-conscious and idealistic about sexuality.

The female adolescent also experiences a wide variety of emotional changes and changes in social behavior related to sexual maturation. Gesell (1949) describes the observable changes in a child's growth and behavior as growth gradients. The eleven-year-old begins the adolescent period by being moody, restless, and quarrelsome, and the parent-adolescent relationship may become strained. By the age of 12, the adolescent becomes cooperative, optimistic, and loving, but at 13 regresses again to being withdrawn, critical of parents, and self-conscious. The fourteen-year-old is extroverted, confident, and influenced more by peers than by parents, but the fifteen-year-old is unpredictable, rebellious, disrespectful to parents, and more independent. By the age of 16, Gesell describes the adolescent as future oriented, relatively emotionally stable, and friendly. Gesell recognized the changing, stressful stage of adolescent growth with its unique problems for the parent-adolescent relationship (cited in Thomas, 1979).

Erikson (1968) looked at the adolescent from a psychosocial viewpoint. His theory of personality describes eight developmental stages, including preadolescence and adolescence. He assumes that personality development is predetermined by the individual's readiness to be driven toward, to be aware of, and to interact with a widening social radius. Growing up is an ego identity process, learning to know and accept oneself, as well as recognizing the patterns and ideals of one's own culture.

Erikson's adolescent identity concept focuses on the assimilation of the elements of identification: capacity, ideals, and opportunity, into a viable self concept. The assembly of all these elements is a formidable task for an adolescent, but if this is not accomplished she faces the danger of an identity crisis as well as the failure to develop a sense of self worth. Identity formation begins long before adolescence, but the adolescent must accomplish the task of synthesis. She must relate her earlier identification with her present assessment of personal qualities, social options, and opportunities now available to her. The youth's resultant personality is influenced by what her environment has permitted, now permits, and to her own skills, needs, and defenses (MacIntyre, 1971). Erikson maintains that to achieve a feeling of identity, a young person must gain a "sense of inner continuity and social sameness which will integrate what she was as a child with what she is about to become" (Erikson, 1956). Most adolescents experience some turmoil in trying to achieve this goal, especially in the area of sexuality. The adolescent girl who is confronted with a pregnancy may find this an impossible goal to achieve (Poliner & Boekelhheide, 1980).

The adolescent must also adopt new social roles that fit her changing appearance and feelings about sexuality. This identity crisis is further complicated by the new expectations of those around her. The child's self esteem grows as she takes specific steps toward her future and develops her own unique personality within an understandable social reality (Erikson, 1959). This leads to an increased sense of purpose as she masters her reality, but role confusion and identity diffusion are potential dangers during this developmental period. An example may be overidentifying with a heroine or a peer group when the youth may temporarily lose her individual identity and become a stereotype of her "crowd." In the adolescent's search for her unique identity she may enter into conflict with parents. A particularly difficult task for the adolescent is resolving her sexual identity and learning appropriate sexual roles. Adolescents who solve the problems of this stage emerge with a strong identity which they believe is acceptable to society, and then progress to the next stage when the young adult, according to Erikson, is ready to establish a sexual relationship. Erikson's ideal is for the young adult to emerge from the adolescent period certain of her ideological position, confident and comfortable with her sex roles, and understanding appropriate behavior (Lefrancois, 1976). These tasks are more easily completed if the youth has positive role models, some flexibility to experiment with different possibilities, and contact with significant others, especially her mother, to provide direct feedback.

These same tasks as described by Erikson are complicated when an adolescent girl becomes pregnant. The pregnancy directs energy from the immediate tasks of the adolescent girl to the need to make decisions regarding a pregnancy and possible motherhood (Rubin, 1975). The major task of the adolescent, identity formation and consolidation, is dramatically interrupted by an adolescent pregnancy (Floyd & Viney, 1974; Protinsky, Sporakowski & Atkins, 1982). Pregnant adolescents tend to be loners (Curtis, 1974), inactive (Smith, 1970), and estranged from their peer group (Davis & Grace, 1971). This isolation makes the identity forming task extremely difficult to achieve. Pregnancy also increases the adolescent's need to depend on the adult world (Adams, et al., 1976), making the goal of independence a difficult task for such an adolescent. The experience of pregnancy as an adolescent also makes the tasks described by Erikson such as time perspective, including learning to postpone immediate gratification, and learning a basic trust in others, more difficult (Protinsky, et al., 1982). These individuals feel a loss of the potential chances for success in making the transition to adulthood more difficult (Erikson, 1968).

Humanistic theorists such as Maslow (1968, 1970) emphasize the importance of awareness of self and relationships with others.

Patterns of emotional responses to situations and people are developed by adolescence with a continuation of this established pattern during this developmental stage (Hoffman, 1970; Offer, 1969). Thus love must be nurtured by a secure home environment, positive life events, and close interpersonal relationships, to develop warm, affectionate, happy, and loving feelings (Mitchell, 1972).

The adolescent strives for acceptance, belonging, recognition, and love, sometimes at any cost, because these feelings are necessary for a positive self concept and a sense of being a worthwhile person (Schneiders, 1965). Buhler and Massarik (1968) have concluded that by adolescence a basic attitude towards life, a constructive and destructive dimension, and achievement motivation trends have developed. Maslow recommends a permissive approach with the adolescent, allowing her to make her own choices based on her knowledge of herself and her judgment of the situation (cited in Thomas, 1979).

Lewin (1936, 1939) described adolescence as a stage of instability because of body changes, growing intellect, and increasing social freedom. The future is largely unknown to the adolescent, and this lack of structure may cause hypersensitivity and other problems. Conflicts between childhood attitudes, values, and lifestyles and those of future adulthood may also lead to emotional tension on the part of the adolescent. These tensions may result in extreme attitude shifts, as the adolescent is caught between the two worlds of childhood and adulthood, not knowing the game rules. She also must learn the often poorly defined appropriate behavior for her new social freedom. Lewin assumed that behavior is goal directed and need satisfying; thus the adolescent will ultimately respond to the most powerful force or need if two incompatible needs direct behavior simultaneously. The adolescent is often confronted with this type of situation with regard to sexuality. The decision making process regarding the sexual needs of the youth is influenced by her environment which includes her mother.

Bandura and Walters (1963) considered sexual behavior in their social learning theory, indicating that reinforcement variables also modify sexual responses. Reinforcement patterns play an important part in shaping and maintaining socially approved patterns of sexual responses. These reinforcement patterns also play a central part in the adolescent's learning of sexual self control. Sexual behavior may also result from the adoption of different combinations of behavior derived from observation of diverse models of sexual behavior (Bandura, 1977), such as the complex indirect models presented to society by the media, as well as models directly observed by the adolescent. The adolescent internalizes information from the observed behavior and decides which behavior will fulfill her needs, storing this information for future use. Depending on her abilities, the adolescent may need assistance in recalling accurate information related to sexual behavior. Motivation and the consequences of sexual behavior are also important to the adolescent, as the consequences of sexual behavior reinforce the chances of it being repeated or being eliminated. The adolescent must learn to predict the probable consequences of her behavior, as she embarks on sexual behavior appropriate to the physical and emotional changes she experiences during her teenage years.

Havighurst (1953) has listed the developmental tasks from infancy to late adolescence, explaining that as each developmental task is achieved, the individual receives positive reinforcement from society and each success builds a foundation for later tasks. Developmental tasks are those things that an individual must learn for healthy and satisfactory growth in society, with each task presenting itself in certain periods of the individual's life and success in each task providing a positive foundation for future tasks.

The developmental tasks of the adolescent listed by Havighurst (1953) include: a) accepting her new physical body; b) accepting and learning appropriate sex roles, that is, identifying with cultural values, habits, interests, and characteristics of the appropriate sex; c) achieving economic and emotional independence from parents and other significant adults; d) preparing for and achieving the socially responsible behavior necessary for marriage and a family; e) achieving new mature relationships with peers of both sexes; f) adopting values and an ethical system appropriate to society (Lefrancois, 1976; Rice, 1978).

RISK FACTORS FOR AN ADOLESCENT PREGNANCY

The various theories about female adolescent physical, cognitive, emotional, and social development have provided the basis for research on the factors which make the young adolescent female "at risk" when pregnancy occurs. The literature varies widely regarding the profile of the adolescent girl at risk, with the spectrum ranging from no essential differences (Baizerman, Sheehan, Ellison & Schlesinger, 1974; Chilman, 1979; Goldfarb et al., 1977; Goldsmith et al., 1979; James, 1972; Juhaz, 1974; Landy, 1983; Phipps-Yonas, 1980; Walters, 1978; Walters et al, 1979) to many factors combining to create a unique difference (Baizerman et al, 1974; Kane, Moan & Bolling, 1974; McKendry et al., 1979; Youngs & Neibyl, 1975).

Physical Risk Factors

Physical factors which have been related to pregnancy in adolescence include: the onset of menstruation at a younger age (Wideholm, Kantero & Rautanen, 1974); the change in body image (Adams, Brownstein, Kennalls & Schmidt, 1976); physical attractiveness (Davidson & Leslie, 1977); and engaging in sexual behavior without the consistent use of contraception (Edwards, Steinman, Arnold & Hakanson, 1980; Forrest, Hermalin & Henshaw, 1981; Gordon, 1979; Konig & Zelnik, 1982; Sorenson, 1973; Weston, 1980; Zabin, 1981; Zabin & Clark, 1981; Zelnik & Kanter, 1980). Adolescence and the level of maturity attained have also been related to teenage pregnancy (Hatcher, 1973, 1976; Phipps-Yonas, 1980).

Cognitive/Educational Risk Factors

Cognitive factors which have been related to unwanted pregnancy in adolescence include school achievement (Card & Wise, 1978; Curtis, 1974; Freeman & Freeman, 1976; Gispert & Falk, 1976; Goldsmith et al., 1979); intelligence and cognitive ability (Cobliner, 1981; Greydanus, 1981; Hatcher, 1976; Juhaz, 1980; Kanter & Zelnik, 1972; McAnarney & Greydanus, 1979; McEwen, Owens & Newton, 1975); sexual knowledge (Juhasz, 1974); the ability to anticipate events as related to Piaget's operative thinking (Bernstein, 1976; Cobliner, 1974); egocentric thinking, "it won't happen to me" (Baizerman, 1977; Elkind, 1976; Piaget, 1972); irrational thinking such as "I can't get pregnant because I have not made a conscious choice" (McKendry et al, 1979); a failure to acknowledge and understand the consequences of sexual behavior (Greydanus, 1981; Nadelson, Notman & Gillon, 1980); an inability to anticipate the future (Bruce, 1978); ineffective sexual decision making skills (Juhasz, 1980); and the convergence of many cognitive factors (Cvetkovich & Grote, 1976; Schinke, Gilchrist & Small, 1979).

Emotional and Social Risk Factors

Several emotional and social factors have been researched in an attempt to identify the adolescent girl at risk for pregnancy. Self esteem (Adams, et al., 1976; Erikson, 1959, 1968; Protinsky, 1982; Zonker, 1977, 1980), as well as maturity and self enhancement as related to self actualization (Kaplan, 1979), have been found to be related to the risk of pregnancy in adolescence. Other emotional factors include need for attention (Kandell, 1979; Kaplan, 1979; Poliner, et al., 1980); the psychological need for love (Epstein, 1980; Davidson & Leslie, 1977; Rosenstock, 1980); passive dependence and depression (Barglow, 1968), and egocentricism (Cvetkovich, 1975). The young adolescent who feels guilty (Davidson & Leslie, 1977; Herold, 1981; Herold & Goodwin, 1981), has a fear of rejection (Kaplan et al, 1979), and/or is unable to defend herself against adverse life circumstances (Kaplan et al, 1979) has also been shown to be at a higher risk for pregnancy. Other character traits such as risk taking (Cobliner, 1974), spontaneity (Koenig & Zelnik, 1982; Zukerman, Tushup & Finner, 1976), and impulsivity (Radner, Bekker, Brown & Richard, 1978) also may increase the risk for an adolescent pregnancy. The teenager may also be at a higher risk for a pregnancy if she has an external locus of control (Connolly, 1975; Seeley, 1976), denies her sexual activity (Denbo & Lundell, 1979), has no purpose in life (Neyerowitz & Malev, 1973), has the desire for more independence (Jessor & Jessor, 1975; Sugar, 1976), has persistent hostility, anger and aggression (Juhasz, 1974; Kandell, 1979; Rosenstock, 1980), and/or has been reinforced for sexual behavior (Kaplan, Smith and Pokorny, 1979). Other researchers have concluded that there are no individual personality differences between pregnant and nonpregnant adolescent girls (Cattanach, 1976; Chillman, 1979; Gispert & Falk, 1978; Goldfarb, et al., 1977; Horn & Turner, 1976; Juhasz, 1974; Landy, 1983).

Researchers have found a wide variety of social factors that relate to the adolescent girl at risk for pregnancy, such as lower socioeconomic status (Goldfarb, Mumford, Smith, Flowers & Schum, 1979; Russ-Eft, et al., 1979; Walters, McKendry & Walters, 1979), the perception that there are no options available (Gaskell, 1978; Presser, 1974), and wanting a temporary escape from unpleasant situations (Curtis, 1974). Adolescent pregnancies have also been related to peer interaction such as the onset of dating at an early age (Davidson & Leslie, 1977), dating a large number of boys (Gispert & Falk, 1978), peer attitudes that sexual activity is acceptable if the girl is "in love" (Walsh et al., 1976), the importance and influence of the peer group (Adams et al., 1976; Erikson, 1959, 1968), and fear of perceived rejection by the peer group (Kaplan, 1979).

Different aspects of the society in which the adolescent girl lives have also been related to the risk of a pregnancy. These factors include pressure as a result of cultural expectations (Walsh, Ferrell, & Tolone, 1976), changes in general societal attitudes towards sexual behavior (Peplau, Rubin & Hill, 1977), a shift in social tolerance toward an increase in premarital sexual behavior at an earlier age (Jessor & Jessor, 1975; Sorenson, 1972), a sexual emphasis in culture influenced by the mass media (Calderone, 1980; Myerson, 1975), and sexual identity confusion (Kaplan et al., 1978; Presser, 1978, 1980). Other aspects of the North American culture related to the risk of pregnancy include different societal expectations between male and female adolescents (Berg, 1975; Schlesinger, 1975), a double standard of sexual behavior (Scales, 1977; Sorenson, 1973), cultural sexual restrictions placed on females (Hite, 1976; Schlesinger, 1975;

Sorenson, 1973), and a lack of appropriate female models (Adams et al., 1976). Lack of moral standards (Christensen & Gregg, 1970), church attendance (Zelnick & Kantner, 1974), conforming behavior and acceptance of conventional norms (Jessor & Jessor, 1975), as well as the level of moral reasoning of the adolescent (Gilligan, Kohlberg, Lerner & Belanky, 1970) may also place the adolescent girl at risk for a pregnancy.

Several home and family life factors have been related to adolescent pregnancies, such as unstable family relationships and broken homes (Curtis, 1974; Hertz, 1977; Phipps-Yonas, 1980), family dysfunction (Baizerman, 1977), being illegitimate oneself, a crowded home, a physically ill mother, no financial or emotional security at home, disturbed parental relationships, a perceived lack of interest in the adolescent on the part of her mother (Vincent, 1969; Widholm et al., 1974), and a negative view of one's home, family life, and parental discipline (Davidson & Leslie, 1977). Parents have a profound influence on the adolescent female, and aspects of this relationship have been related to adolescent pregnancies. These aspects include parental expectations (Jessor & Jessor, 1975), being estranged from one's parents (Coddington, 1979; Peterson, et al., 1982; Sugar, 1975; Teevan, 1972), family or parental rejection (Kaplan, 1979), negative changes in the parent-child relationship leading to insecurities on the part of the adolescent (Larson, Spreitzer & Snyder, 1976), perceptions of parental sexual permissiveness (Walsh, Ferrell & Tolone, 1976), a negative father-daughter relationship (Hepburn, 1981; Juhasz, 1980;

Kaplan, et al., 1977; Landy, 1983), lack of identification in a positive manner with the parent (Jessor & Jessor, 1977), and absence of parental discussion about sexual behavior (Gisper & Falk, 1978; Reiss, 1967; Sorenson, 1973). Adolescent girls have also stated that escaping an unpleasant home situation is a motivation to become pregnant (Cattanach, 1976; Chilman, 1980; Peterson, et al., 1982).

Mother-Daughter Communication About Sexuality

The adolescent girl's relationship with her mother is an important factor in assessing the risk of an adolescent pregnancy (Chillman, 1978, 1980; Cobliner, 1981; Fox, 1979; Inazu & Fox, 1978, 1980; Kandell, 1979; Landy, 1983; Peterson, et al., 1982; Phipps-Yonas, 1980; Rosenstock, 1980; Shah & Zelnik, 1981; Smith, 1975; Young, Berkman & Rehr, 1975). Factors in this relationship related to the risk of a pregnancy include feeling rejected or unloved by one's mother (Barglow, 1968; Cobliner, 1981; Curtis, 1974; Epstein, 1980; Fox, 1979; Juhasz, 1974; Phipps-Yonas, 1980; Shaffer, et al., 1978; Young, 1945), the lack of a close mother-daughter relationship (Abernathy & Abernathy, 1974; Cobliner, 1981; Inazu & Fox, 1980; Jessor & Jessor, 1974; Kandell, 1979; Miller & Simon, 1974), immature ties with one's mother (Schaeffer & Pine, 1972), as well as a mother's failure to teach her daughter the basic emotional control to restrain her instinctive sexual drive until she meets the conditions required by society (Juhasz, 1974; Kimball, 1969). The risk of an adolescent pregnancy occurring is reduced if the daughter feels close to her mother (Cobliner, 1981; Curtis, 1974) and is able to communicate effectively with her mother both in a general way (Rautanen, 1972) and particularly about sexual issues (Cobliner, 1981; Fox & Inazu, 1980; Gispert & Falk; 1978; Inazu & Fox, 1978; Widholm et al., 1974). Goldfarb and others (1977) concluded that early sexual education communicated by the mother reduced the risk factor for a teenage pregnancy.

Ineffective mother-daughter sexual communication has also been related to the risk of an adolescent girl becoming pregnant (Bennett & Dickinson, 1980; Forrest et al., 1981; Herold, 1979, 1981; Poliner & Boekelheide, 1980; Shah & Zelnik, 1981; Yalom, Estler & Brewster, 1982; Zabin & Clark, 1981). The effective use of contraception is, of course, directly related to the risk factor of pregnancy. The adolescent is more likely to use contraception if she perceives parental approval for its use (Cohen, Severy & Ahtola, 1978; Forrest, et al., 1981; Herold, 1979, 1981; Shah & Zelnik, 1981; Werner & Middlestadt, 1979; Zabin & Clark, 1981). For the adolescent female this parental approval is most often on the part of her mother. Unfortunately, mothers tend to assume that general behavioral values will influence the adolescent's sexual behavior without specific discussion of sexual behavior and the use of contraception (Biddle, Bank & Marlin, 1980). Factors found to be related to the inadequate use of contraception by the sexually active adolescent female include inadequate maternal supervision (Juhasz, 1974), permissive maternal attitudes (Hornick, Doran, Heffernan & Crawford, 1979), parental conflict or a cold, withdrawn mother with whom the adolescent female cannot readily identify (Abernathy, Robbins, Abernathy, Grunebaum &

Weiss, 1975), a lower socioeconomic lifestyle and a lower educational level (Hornick et al., 1979; Kanter & Zelnik, 1973), and inadequate mother-daughter communication (Campbell & Barnlund, 1977).

Effective communication has also been related to the risk of an adolescent female becoming pregnant. Adolescent pregnancies are in part a consequence of the failure to maintain adequate communication with significant others (Bennett & Dickinson, 1980; Bright & Robin, 1981; Byrne, 1977; Campbell & Barnland, 1977; Juhasz, 1980; Kirkendall, 1976; Robin, 1981). In an extensive survey, Hass (1979) asked female adolescents "Have there ever been times when you have been on a date when you had sexual contact even though you did not feel like it?" Forty-eight percent of the female adolescents aged 15 to 16 years answered "yes," giving reasons such as "feeling pressured," "intimidated," and simply "unable to say no." Fensterheim (cited in Baer, 1976) has concluded that the inability to say "no" on the part of the young, single woman may be the single greatest cause of unplanned, unwanted promiscuity, which often leads to a pregnancy. Nonusers of contraception also seem to be less effective communicators. Arnold (1972) found only 17 percent of sexually active couples had discussed contraception, although Gilbert and Matthews (1974) found that 48 percent of sexually active couples were of the opinion that partners should talk about the use of contraceptives. Ineffective mother-daughter communication about sexuality and contraception also reduces the chances of effective communication about contraception between the adolescent girl and her sexual partner (Bracken, et al, 1977; Kirkendall & McDermott, 1970). Effective sexual communication between mothers and their adolescent daughters should serve as a model for the adolescent when communicating about sexual issues with her partner.

Attempting to identify the adolescent girl at risk for a pregnancy is extremely difficult. Some researchers have concluded that adolescents who experience unwanted pregnancies actually have little in common (Baizerman, et al., 1974; Kane, et al., 1974; Olley, 1971; Schinke, et al., 1979), while other researchers have concluded that a combination of many factors results in adolescent pregnancies (Vincent, Haney, & Cochrane, 1969; Watts, 1971; Youngs & Niebyl, 1975). After completing an extensive literature review, Phipps-Yonas (1980) concluded that there is no single profile of the pregnant adolescent, but that circumstances and choices made by the teenager do influence the risk factor of a pregnancy. McKendry and others (1979) concluded that educational efforts must be directed to all adolescents in an effort to reduce pregnancies because of the difficulty in identifying those at risk. The wide range of factors identified as placing the adolescent female at risk for a pregnancy, either individually or in combination, lead to the conclusion that any adolescent female is, at least to some degree, at risk for an unwanted pregnancy. The adolescent girl's mother, a significant and constant person through her adolescent years, is in a position to provide her daughter with continuous support, education and guidance regarding her emerging sexuality and resulting behaviors (Biddle, et al., 1980; Fischer, 1981;

Fox & Inazu, 1980, 1982; Inazu & Fox, 1978, 1980; Rosenstock, 1980; Shah & Zelnik, 1981; Yalom, Esler & Brewster, 1982).

MOTHER-DAUGHTER COMMUNICATION

Assertive Communication

Effective communication is essential to maintain a close, positive relationship between a mother and her adolescent daughter, and it is also the preferred method of transmitting sexual education and guidance from mother to daughter. Communication is an important aspect of adolescent development affecting the mother-daughter relationship, as well as the adolescent-peer and male-female relationships. Communication, in assertiveness theory, is a psychological concept which has a set of specific procedures, the goal being to increase skill and confidence in communicating with others in an honest, direct and appropriate manner (Gornally, Hill, Otis & Rainey, 1975). Good communication tends to result in closer and more meaningful interpersonal relationships, self respect, and social competence (Lazarus, 1971). The assertive communicator is more able to make statements such as "this is me and this is what I feel, think, and want" when communicating with friends and family, reflecting self respect and the acceptance of one's personal limitations (Fensterheim and Baer, 1975). Assertive communication also includes the ability to protect one's own rights as well as those of others, to achieve personal goals without consciously hurting others, to feel appropriate self confidence, to be appropriately socially and emotionally expressive, and to make choices for oneself (Alberti & Emmons, 1974; Leiberman, King, Derisi & McCann, 1975). Assertive theory is based on the assumption that every individual has basic human rights, including the right to refuse requests, to express one's needs, to make mistakes, and to express oneself without infringing on the rights of others. It is also assumed that communication and behavior can be changed and that every individual, with her unique physical limitations and background, always does the best she can to respond as effectively as possible in any given situation (Bandura, 1973; Jakubowski, 1977; Skinner, 1971).

As early as 1940, Salter stated that assertive communication is a set of honest and recommended exercises for stating feelings, for communicating non-verbal expressions of feelings, practicing contradiction, making "I" statements, accepting compliments, and practicing spontaneity (Brodie, 1979; Kelley, 1979). Wolpe (1958) first used the term assertiveness when describing openness in interpersonal behavior, hypothesizing that assertiveness in interpersonal communication would result in the inhibition of anxiety and would introduce new, more effective methods of communication. He later proposed that assertiveness training was appropriate for persons who showed anxiety in interpersonal relations (Wolpe, 1969). Lazarus (1971) integrated the behavioral and humanistic approaches by explaining that assertive communication is basically standing up for one's personal rights, assuming that an individual's repertoire (especially that of an adolescent) may not include appropriate assertive responses. He extended the use of assertiveness training to teaching basic social skills,and concluded that assertive communication is necessary for healthy, emotionally free interpersonal relationships which then result in less anxiety, more self respect, social competence, and greater meaning in such relationships. All of these aspects of assertive communication are important for effective mother-daughter communication.

The concept of modeling, that is, the process of learning new behaviors and/or responses by observing and imitating the behavior of another person, is essential to assertive communication (Bandura, 1969, 1971; Rudner, 1976). This learning is influenced by both direct and vicarious reinforcement. Adolescents learn a wide variety of responses through modeling procedures (Bandura, 1971; Dollard & Miller, 1979), including sexual communication, behavior, attitudes, and values (Thomas, 1979). Based on this modeling, new behaviors are the result of perceived success, and positive impact on one's social environment (Lloyd, 1979). This is true for the adolescent as she is learning new social and sexual communication skills in a changing and somewhat unpredictable environment.

The effectiveness of maternal approval and disapproval as reinforcers and anxiety arousers gives the mother a powerful tool for teaching her child the necessary rules for social life. Fostering dependency in the child makes her not only responsive to direct reinforcement but also likely to acquire behavior patterns similar to those of her mother. This pattern of dependency that the child develops, depends on reinforcement contingencies set by the family environment. (Bandura & Walters, 1963).

Modeling is an effective way to teach children assertive communication (Bandura, 1971; Chittenden, 1942). Assertive techniques for teaching effective communication have been used sucessfully with women (Jakubowski & Spector, 1973; Osborne & Harris, 1975; Rathus, 1972; Schinke, et al., 1979), mothers (Dembo & Lundell, 1979; Schoemaker & Paulson, 1976), and adolescents (Lange & Jakubowski, 1976; Rathus, 1973; Rathus & Rupert, 1973; Thoft, 1977; Vaal & McCullagh, 1977). Considering the passive role advocated for women by society (Calderone, 1980; Hollands, Worth & Wall, 1977), it is the mother's responsibility to change this by teaching her daughter assertive communication behavior, especially to say "no" to sexual behavior until she is ready (Montgomery, 1976; Potter, 1980; Sorenson, 1973). The Hite (1976) report states that many women feel powerless, passive, and unable to say "no." This finding emphasizes the importance of mothers teaching their daughters positive, constructive, and assertive communication and behavior.

Normal adolescent development equips the adolescent for physical intimacy but often leaves her without the communication and interpersonal skills necessary to regulate this sexual intimacy (Campbell & Barnlund, 1977; Juhasz & Sonnenshein-Schneider, 1980; Schinke, et al., 1977). As well, it is important for the adolescent girl to develop the assertive communication skills which are necessary to communicate effectively with her mother, thus increasing the probability of an open, postive mother-daughter relationship (Osborne &

Harris, 1975). Although it is essential for the adolescent to learn the effective communication skills involved in transmitting emotions to significant others in a open, honest, direct and appropriate (assertive) manner (Leiberman, et al, 1975), it may be difficult for the adolescent who lives in a changing and stressful world. The adolescent female's mother is the primary person to provide a role model and to teach her daughter effective communication skills, including communication about sexuality (Biddle, et al., 1980; Fox, 1979, 1980; Fox & Inazu, 1980, 1982; Lewis, 1973; Shah & Zelnik, 1981; Yalom, et al., 1982).

Mother-Daughter Relationship

The role of identification begins with preestablished dependency, followed by the development of the ability to depend on, control, and punish oneself for transgressions, which is the internalization of social rules. Identification involves the imitation of another person's behavior, mannerisms, beliefs, and values. Ideally, the adolescent reinforces herself as she remembers the words her mother used, warns herself of the consequences of her behavior, and punishes herself by reproving herself for inappropriate behavior. Two results of this identification are the development of a conscience and the acquisition of the roles and behavior patterns appropriate to one's own sex. Observation of the reinforcement of other's behavior increases the possibility of the observer imitating or modeling such behavior (Bandura & Perloff, 1967). Once an adolescent has assigned a positive value to a response pattern, set a reasonable goal for performance, and achieved that goal, she is satisfied internally and becomes less dependent on significant others for reinforcement (Rice, 1978). The mother-daughter relationship is an important transmission structure for sexual information and socialization (Biddle, et al. 1980; Fox, 1978, 1979, 1980; Fox & Inazu, 1980, 1982; Hirsch, 1981; Roberts & Gagnon, 1978). Mothers tend to be the initial source of female role learning for their daughters, who observe the role of their mother in the family as a wife and mother. The mother's values, attitudes, and behavior, both directly and indirectly, determine the sexual roles, attitudes and behaviors of their daughters (Fox, 1979, 1980; Fox & Inazu, 1980, 1982; Inazu & Fox, 1980; Juhaz, 1974; Lipman-Blumen, 1973; Shah & Zelnik, 1981; Yalom, et al., 1982). Mothers and daughters share a common female gender and are thus linked by a shared sexual experience separated by an age difference. Lack of mother-daughter communication tends to confuse the adolescent regarding the transmission of appropriate sexual norms. (Dickenson, 1976; Sorenson, 1972). Mothers and daughters are a family, an institution of continual change, with each member moving through a different stage of life and experiencing individual differences while going through each stage. The mother-daughter relationship during the daughter's adolescence may be a source of strain within the family, because the adolescent and her mother are each moving through developmental stages, each of which presents difficult tasks and challenges. The different developmental stages of mother and daughter have some conflicting tasks, and within both roles (especially the mother's) there are inconsistent demands. The developmental tasks of the adolescent daughter include autonomy and separation, both of which involve distancing from the family, as well as resolving feelings about this emerging independence. This developmental task may lead to erratic, unpredictable desires for dependence and independence from the family, as well as intense contradictory needs for closeness to, and separation from, the family. The adolescent female also has the developmental task of forming appropriate relationships and attachments outside the family, especially heterosexual relationships which include dating, going steady, and falling in love. The development of mastery over sexual impulses and anticipation of the consequences of sexual behavior must also occur. The adolescent tends to be preoccupied with herself and her needs, placing pressure on the functioning of the family unit and the mother-daughter relationship (Chodrow, 1978; Cobliner, 1981; Fischer, 1981; Fox, 1978, 1979, 1980; Friedman, 1980; Hirsch, 1981; Rossi, 1968, 1980; Turner, 1970).

While the adolescent is working on these and other developmental tasks, her mother is also experiencing other challenging developmental tasks. The mother's role with her daughter is twofold: caregiver for the adolescent-child, and guide for the adolescent-woman. Bernard (1975) suggests that "middle motherhood" is a stage of renegotiation of the maternal role, concluding that the mother tends to stop feeling responsible for her daughter's behavior (especially sexual behavior), and ignoring her sexuality, hoping that she will not become pregnant before marriage. Reiss (1973) and Reiss and Miller (1974) suggest, on the other hand, that as the daughter reaches puberty, the mother becomes considerably less sexually permissive in her attitudes about premarital sexual behavior. Reiss concluded that mothers tend to take an active role in their daughter's sexual education and deliberately attempt to discourage sexual experimentation. Most mothers, in reality, probably fluctuate between the two extremes, looking for ways to guide their daughters and also to encourage independence. The mother of an adolescent daughter must learn when and when not to share information, to allow her daughter to make decisions and accept the consequences, to give in to her daughter regarding her behavior, as well as to protect and to guide her. These tasks require energy, awareness of both one's own personal needs and those of her daughter, seeking alternatives, negotiating, and a considerable investment of time. The mother must also transmit an attitude of positive regard and acceptance to her daughter so that she will feel comfortable discussing her sexual concerns and behavior.

The mother of an adolescent daughter must also come to terms with her own adult stage in life (Bernard, 1975). This mid-life crisis often includes the task of finding roles beyond that of motherhood, such as returning to the work force. She must also deal with aging, the perceived loss of the youth so valued by western culture, at the same time that her daughter is in full possession of this culturally valued attribute. This crisis of loss of youth may foster unintentional anger and hostility between mother and daughter (Beiser, 1977). As mothers of females, women must deal with conflicts between their parental role and the actualization of their own self. Reiss

(1967) acknowledges the importance of maternal attitude toward daughters and the daughter's sexual permissiveness. He states that the teenager's level of premarital sexual permissiveness is directly linked to the amount of responsibility expected of her by her mother. Increased responsibility leads to increased interaction with family members, greater role modeling, and an increased likelihood of the daughter identifying with the perceived more conservative sexual standards of her mother. Reiss concluded that as the mother spends more time interacting with her daughter, she is a more important figure in her daughter's socialization. Early identification with her mother may result in an adolescent's greater dependancy on her for emotional support. The mother has the most influence on her daughter's sexual standards (Cobliner, 1981; Fox, 1978, 1979, 1980; Fox & Inazu, 1980, 1982; Inazu & Fox, 1980; Kaats & Davis, 1970; Kandell, 1979; Kirkendall & Libbey, 1966). Spanier (1975) concluded that the significant other who gives sexual information to the adolescent is the most likely person to influence her sexual behavior, which emphasizes the importance of maternal involvement in adolescent sexual guidance. Sexual information presented in a responsible manner is important for the adolescent (Goldfarb, et al, 1977) preferably by her mother (Herold, 1981; Herold & Goodwin, 1979, 1981; Roosa, 1983; Rosenstock, 1979; Spanier, 1975; Zabin & Clark, 1981). This flow of information should be started with the daughter at an early age, as maternal influence may weaken during adolescence (Libbey, Gray & White, 1978).

Kirkpatrick (1975) emphasized the need for mothers to learn assertive communication skills such as comfort, openness, honesty, not making the assumption that they know what the adolescent will say, realizing their own limitations, and learning to initiate discussions with the adolescent. Assertive communication is a vital component if the mother-daughter relationship is to assist in the adolescent's growth to become an independent, happy, productive adult. In this vein, Baer (1976) has described in detail a model to assist mothers in the development of their daughters' assertive communication skills. This model includes modeling as well as direct teaching, emphasizing the importance of assertive communication between a mother and her daughter as the adolescent grows into adulthood. This assertive communication must also include the area of sexuality which, because of its emotional connotations, is more easily achieved when a close mother-daughter relationship has been established in early childhood. The adolescent learns and models her parents, especially her mother's communication patterns, positive or negative. As well, the adolescent's self concept affects her perceived communication with her parents, with a healthy self concept being related to perceived parent communication as positive and constructive, and a low self concept being related to parent communication perceived as negative and destructive. Hass (1979) reported that adolescents preferred to talk to their parents about sexuality but felt that their parents had indicated verbally or nonverbally that they were unwilling to discuss it. Parents model openness (or the opposite) by their behavior with each other and with their children. It is significant that 65 percent of the adolescents answered "no" when asked if they could be open with their parents about sexuality. The Hass (1979) report also indicated 15 percent of female adolescents told their mothers only what they knew would meet with approval, 11 percent told them nothing, 23 percent told them general things and 51 to 54 percent of the girls reported ever trying to speak with their mothers about sexuality.

Mother-Daughter Communication About Sexuality

Lack of effective communication skills regarding sexuality on the part of the adolescent is related to inadequate teaching by the parent (Potter & Smith, 1976). Poor communication between adolescents and their parents encourages the misperceptions that adolescents often have about their parents' sexuality (Roosa, 1983; Pacs, Godow, Talone & Walsh, 1977), making sexual discussions difficult. Unfortunately, mothers often experience problems communicating and transmitting sexual information and standards to their adolescent daughters (Herold & Goodwin, 1979, 1981; Kandell, 1979; Montgomery, 1976), which may lead to a loss of maternal sexual guidance (Blake, 1973). Sorenson (1973) reported that adolescents have less respect for their mothers' opinions about sexuality (65%) than their opinions in general (80%). Effective mother-daughter communication is important for the healthy adjustment of the adolescent. Although some researchers have concluded that there is no generation gap as described by the media (Conger, 1977; Sorenson, 1973), adolescents do experience difficulty communicating with their mothers. Harris (1971), for example, found 25 percent of adolescents said they experienced difficulty communicating with their mothers.

Adolescents and mothers do report differences in sexual attitudes and values (Sorenson, 1973) and these differences contribute to difficulty in mother-daughter communication.

Although professionals have recognized that the mother is an important source of sexual information for the adolescent girl (Lindemann, 1974), a lack of direct, positive communication between mother and daughter about sex, sexual values, contraception, and other sexual concerns has been confirmed (Fox, 1978, 1979, 1980; Fox & Inazu, 1980, 1982; Herold & Goodwin, 1981; Inazu & Fox, 1980; Kirkendall and Cox, 1967; Shah & Zelnik, 1981; Skolnick, 1973). Block (1972) investigated the sexual communication of mothers and their seventh grade daughters finding that 20 percent of the mothers had never discussed menstruation, 50 percent had not discussed the male role in reproduction, and 68 percent had not discussed any aspect of contraception. Block thus concluded that adolescent girls do not receive adequate sexual education from their mothers.

Fox and Inazu (1978) studied sexual communication patterns of mothers and their daughters (age 14 to 15 years). Replying to a questionnaire about sexually related topics, 60 percent of both mothers and daughters reported discussing boyfriends and dating, 50 percent reported discussing menstruation and sexual morality topics, 33 percent had discussed sexual intercourse and conception, and just over 20 percent had discussed contraception.

In 1980 and 1982, Fox and Inazu expanded their sample, using the same instruments to study mother-daughter communication about sexuality. They reported that 98 percent of mothers and 93 percent of daughters had discussed menstruation, 97 percent of mothers and 90 percent of daughters had discussed dating and boyfriends, 86 percent of mothers and 81 percent of daughters had discussed conception, 81 percent of mothers and 70 percent of daughters had discussed sexual intercourse, and 75 percent of mothers and 70 percent of daughters had discussed contraception at least once. Although there is a high degree of consistency, mothers tended to report slightly more discussion of sexual topics than their daughters, particularly in the area of sexual morality. Daughters tended to initiate the discussions about dating and menstruation, but mothers tended to initiate discussions of sexual morality, sexual intercourse and contraception. Both mothers and daughters reported the least comfort and most reluctance to discuss sexual intercourse and contraception. Inazu and Fox (1980) concluded that the mother's impact on her daughter's sexual education and behavior is subtle and unspoken, achieved through modeling, transmission of attitudes, and, most importantly, a positive mother-daughter relationship based on respect and appropriate communication.

The importance of sexual education for both the mother and the adolescent has been confirmed in studies which have concluded that even adolescents who had discussed contraception with their mothers were ignorant or had false ideas about contraception (Dembo & Lundell, 1979; Roosa, 1983). Knowledge alone is not enough to prevent unwanted adolescent pregnancies. Sexual knowledge must be integrated into the adolescent's cognitive process, communication skills, social norms, and self image, to behave responsibly sexually (Juhasz & Sonnenshein-Schneider, 1980; Walters, et al., 1979). The mother is in a prime position to assist the adolescent with this process, as she provides part of her daughter's sexual education by overtly or covertly informing her about sexual facts and transmitting attitudes and values regarding sexuality.

A mother's ability to teach sexual knowledge and skills to her adolescent daughter has been found by Potter and Smith (1976) to be inadequate. They concluded that only 10 percent of adolescents felt comfortable communicating with their mothers about sexual concerns, although their mother's involvement was seen by their daughters as being very important. Sorenson (1972) found that adolescents assumed that their parents preferred them to discuss sexual matters with their friends rather than with them. Although the adolescent's mother may be the preferred, or indeed the first, source of sexual information, she may not be the last or most accurate (Davidson and Leslie, 1977). Research indicates that only 20 to 60 percent of mothers discuss the various aspects of sexuality, that is menstruation, reproduction, contraception, and male-female relationships with their daughters (Dvorkin & Poindexter, 1980; Rothenberg, 1978). Many sexually active adolescent females who have discussed contraception with their mothers were found to be basically ignorant and/or to have false ideas about sexuality and contraception (Dembo & Lundell, 1979; Stein, 1976).

Chess, and others (1976) concluded that there was little discussion of actual sexual behavior between mother and daughter and that when sexual discussion occurred it was usually as a result of conflict, even though mothers had a general idea about the extent of their daughter's sexual activity.

Sexual information is rarely given with total comfort because of the heritage of ignorance and secrecy about sexuality passed from mother to daughter (Hite, 1976). Although the importance of sexual education between mother and daughter has been well documented (Dickinson, 1978; Fox, 1978, 1979, 1980; Fox & Inazu, 1980, 1982; Greydanus, 1981; Herold & Goodwin, 1979, 1981; Inazu & Fox, 1980; Kandell, 1979; Rosenstock, 1980; Shah & Zelnik, 1981; Sorenson, 1972; Yalom, et al., 1982), both mother and daughter find it uncomfortable to discuss sexuality. The mother's comfort level is important because it is she who most often opens the discussion on sexuality (Needles, 1977).

Meikle and others (1980) studied Calgary students and parental reaction to sex education, including contraception for teenagers. They found that 81.3 percent of the parents studied agreed that schools should offer a sexual education program, but 40 percent of the parents in the study stated that contraception information should be taught by the adolescent's parent. Only 11.9 percent of the Calgary students thought that mothers found it easy to talk to them about contraception. Mothers who raise the issue of contraception with their daughters reveal that they think that their daughter is, or may become, involved in a sexual relationship (Furstenberg, 1971; Needles, 1977). Although this is a difficult responsibility, it has been shown that in families where contraception has been discussed by mother and daughter, the daughter is more likely to use it if sexually active (Forrest, et al., 1981; Herold & Goodwin, 1979, 1981; Zabin, 1981; Zabin & Clark, 1981). Hanson, Jones and Chernovetz (1979) concluded that adolescents who were afraid to ask about contraception had less knowledge, and were therefore less likely to use contraceptives if sexually active. Discussion with her mother enables the girl to define sexual activity as a behavior subject to planning and regulation, and this reduces the chance of a pregnancy in adolescence (Needles, 1977). Ktsanes (1977), in a study of adolescents who attended a family planning clinic, found that 60 percent had discussed going to the clinic with someone in their family, usually their mother. Zabin and Clark (1981) found "fear of their family finding out" to be the major reason given for not attending a family planning clinic for those girls who were already pregnant and "her mother's suggestion to go" the major reason given for those girls who had not yet engaged in sexual activity.

Furstenberg (1976) found that 92 percent of mothers reported discussing sexuality with their daughters, 61 percent of mothers reported discussing contraception, but only 45 percent of daughters reported discussing contraception. This finding led Furstenberg to question the accuracy and directness of the communication about contraceptives, but she concluded that even limited communication does influence the daughter. Miller (1976) found that 40 percent of effective adolescent contraceptive users reported that their mothers were their first source of sexual information, compared to 12 percent of pregnant adolescents. Rothenberg (1978) concluded that mothers who had engaged in premarital sexual behavior themselves were more likely to discuss contraception with their daughters than mothers who had not.

The adolescent girl is more likely to use contraception if her mother discusses it with her (Furstenberg, 1971) but, unfortunately, this is not the norm, as indicated in Sorenson's (1973) study. Although the majority of mothers do not talk to their adolescents about sexuality and/or birth control, Furstenberg (1970) reported that over 90 percent of mothers wanted their daughters to use contraceptives if they were sexually active. These combined results indicate a serious communication problem between the mother and her adolescent daughter. Research indicates that the adolescent girl tends to be more sexually active without using contraception and thus at a greater risk for pregnancy if her mother does not communicate with her about sexual issues (Bright & Robin, 1981; Delamater & MacCorquodale, 1978; Herold & Goodwin, 1981; Kandell, 1979; Reiss, 1975; Robin, 1981; Yalom, et al., 1982; Zabin & Clark, 1981). The factual information provided by mother-daughter communication is important as well as the daughter's awareness and acceptance of her own sexuality and behavior, which are a prelude to her accepting responsibility for her contraceptive behavior (Fox, 1977). Thus mother-daughter discussion of sexual information and behavior has both a direct and an indirect influence on the daughter's sexual behavior, providing her with the basic security, poise and self protective strength necessary to enable her to maintain control over her sexual behavior (Fox, 1978, 1979, 1980; Fox & Inazu, 1980, 1982; Inazu & Fox, 1980; Juhasz, 1974).

SUMMARY

In summary, theoretical concepts about adolescence remain varied as each adolescent matures at her own individual rate, but physical sexual changes are especially dramatic, and there are often distinctive lags between this and the other areas of adolescent development. Thus the sexually maturing adolescent female often lacks the cognitive, emotional, and social maturity needed to deal effectively with her new physical growth. Since moral development usually lags behind cognitive development and is subject to peer influence, parental guidance remains important in discussions of the sexual decisions adolescent female must make. The adolescent female tends to model, and be reinforced by her mother as she learns her adult female roles, particularly those relating to sexual behavior.

Communication is an important part of the mother-daughter relationship, especially during adolescence, with honest, open, direct, and appropriate communication learned by modeling and reinforcement. It is especially important for the adolescent girl and her mother to communicate in a positive, assertive manner regarding sexuality, both as a modeling process for the female adolescent to communicate assertively in peer sexual situations and as a transmission of sexual knowledge and guidance from mother to daughter.

A review of research indicated that there has been a wide variety of physical, cognitive, emotional, and social factors related to the at risk adolescent female, but that these are not predictors of pregnancies, leading to the conclusion that efforts to reduce pregnancies must be directed to all adolescents. Each mother, therefore, must assume responsibility to reduce as many risk factors as possible for her adolescent daughter.

A research review has also indicated that although adolescents prefer their mothers to be their source of sexual information, this is seldom the case, because daughters find it difficult to discuss sexuality with their mothers. The mother may also be an ineffective source, as discrepancy has been reported between what the mother thinks she has discussed with her daughter and what the daughter perceives her mother has discussed. Effective communication is also influenced negatively if sexual discussion is the result of a problem or conflict.

Thus, the mother-daughter relationship would appear to be a most important transmission structure for sexual information, values, attitudes, and behaviors. The adolescent female's mother is usually the most consistent person in her life, giving the mother the opportunity to provide continual guidance as the adolescent works through difficult developmental tasks. A consistent, loving mother-daughter relationship with effective communication (including communication about sexuality) gives the adolescent female the optimal opportunities to achieve the developmental tasks of adolescence; to integrate sexual knowledge into her cognitive process; to learn communication skills; to develop a positive self concept; and to behave responsibly sexually. This support and communication should reduce the risk of the adolescent female experiencing a pregnancy.

From the multitude of factors identified in the preceding literature review of physical, cognitive/educational, emotional, and social risk factors for a pregnancy in adolescence, the following factors were selected for this study based primarily on the Calgary study by Meikle and others (1981) and studies by Fox and Inazu (1980). This study focused on the risk factors for a pregnancy in adolescence including age, education, family composition, birth order, sexual knowledge, the onset of dating, spontaneity, sources of sexual information and sex education classes.

Considering the importance of mother-daughter communication as it relates to the risk factors for a pregnancy in adolescence as identified in the literature review, this study focused on the communication patterns regarding sexuality between Group 1 (daughters who have experienced an adolescent pregnancy and their mothers) and Group 3 (daughters who have not experienced a pregnancy and their mothers). The focus of the communication patterns included the amount of discussion, time (before or after the adolescent is involved in sexual behavior), initiator of discussion, reason (as a result of a conflict), personal and perceived other's comfort level and assertiveness.

CHAPTER III

EXPERIMENTAL PROCEDURE AND DESIGN

HYPOTHESES OF THE STUDY

The basic focus of this study was mother-daughter sexual communication as it relates to the risk of a pregnancy in adolescence based on factors related to adolescent pregnancy and mother-daughter sexual communication determined important from the review of the literature. The hypotheses of the study were derived from three basic questions regarding differences between daughters who have experienced an adolescent pregnancy and their mothers (Group 1) and daughters who have not experienced an adolescent pregnancy and their mothers (Group 3) pertaining to (A) risk factors for an adolescent pregnancy, (B) agreement between mothers and their daughters concerning their communication about sexuality, and (C) differences in sexual communication patterns, which also included assertiveness levels. From each question a number of null hypotheses were set.

Question A: Is there a difference between Group 1 and Group 3 with regard to the daughter's risk for an adolescent pregnancy?

Hypothesis A1: There is no difference between Group 1 and Group 3 with regard to age.

Hypothesis A2: There is no difference between Group 1 and Group 3 with regard to education.

Hypothesis A3: There is no difference between Group 1 and Group 3 with regard to family composition.

Hypothesis A4: There is no difference between Group 1 and Group 3 with regard to birth order.

Hypothesis A5: There is no difference between Group 1 and Group 3 with regard to sexual knowledge.

Hypothesis A6: There is no difference between Group 1 and Group 3 with regard to age at the onset of dating.

Hypothesis A7: There if no difference between Group 1 and Group 3 with regard to sexual spontaneity.

Hypothesis A8: There is no difference between Group 1 and Group 3 with regard to sources of sexual knowledge.

Hypothesis A9: There is no difference between Group 1 and Group 3 with regard to sex education in school.

Question B: Is there a difference between Group 1 and Group 3 with regard to agreement between mothers and their daughters concerning their communication about sexuality?

Hypothesis B1: There is no difference between Group 1 and Group 3 with regard to agreement on the amount of communication about sexuality (number of times).

Hypothesis B2: There is no difference between Group 1 and Group 3 with regard to agreement on the timing of the communication about sexuality (before and after the adolescent is involved in the sexual behavior).

Hypothesis B3: There is no difference between Group 1 and Group 3 with regard to agreement on who was the initiator of the communication about sexuality.

Hypothesis B4: There is no difference between Group 1 and Group 3 with regard to agreement on the reason for the communication about sexuality (as a result of a problem).

Hypothesis B5: There is no difference between Group 1 and Group 3 with regard to agreement on their personal comfort level in communication about sexuality.

Hypothesis B6: There is no difference between Group 1 and Group 3 with regard to agreement of their perceived mother's or daughter's comfort level in communication about sexuality.

Hypothesis B7: There is no difference between Group 1 and Group 3 with regard to agreement as to the level of assertiveness of the mother or daughter.

Question C: Is there a difference between Group 1 and Group 3 with regard to mother-daughter communication about sexuality?

Hypothesis C1: There is no difference between Group 1 and Group 3 with regard to the amount of communication about sexuality (number of times).

Hypothesis C2: There is no difference between Group 1 and Group 3 with regard to the timing of communication about sexuality (before and after the adolescent is involved in the sexual behavior).

Hypothesis C3: There is no difference between Group 1 and Group 3 with regard to who was the initiator of communication about sexuality.

Hypothesis C4: There is no difference between Group 1 and Group 3 with regard to the reason for the communication about sexuality (as a result of a problem).

Hypothesis C5: There is no difference between Group 1 and Group 3 with regard to their personal comfort level in communication about sexuality.

Hypothesis C6: There is no difference between Group 1 and Group 3 with regard to the perceived mother's or daughter's comfort level in communication about sexuality.

Hypothesis C7: There is no difference between Group 1 and Group 3 with regard to assertiveness levels.

THE SAMPLE

A sample of adolescent girls, 12 to 18 years of age, who have experienced a pregnancy and their mothers, was drawn from the patients of an obstetrician, the clients of Alberta Social Services Unwed Mothers Unit, residents of Woodside Home (for pregnant adolescents), Terra School for pregnant adolescents and personal contacts. The sample of adolescent girls who have not experienced a pregnancy and their mothers was drawn from the patients of the same obstetrician, women's courses, and personal referrals. The sample was drawn from Edmonton and the surrounding area.

The two groups were considered to be comparable as they were drawn from the same area within the same time frame. There were limitations with this sample including the wide age range (12 - 18 years), the request for both mothers' and daughters' participation, the sensitive topic, the exclusion of socio-economic status and religion (necessary to obtain distribution permission from agencies), and the wide range of distribution (social services and personal referrals).

Three hundred and twenty questionnaires were distributed in total. The final sample consisted of 22 daughters who had experienced a pregnancy and their 22 mothers, 12 daughters who had experienced a pregnancy but whose mothers did not respond (residents of Woodside),and 31 daughters who had not experienced a pregnancy and their 31 mothers. This was a relatively small rate of return and since only the questionnaires distributed to Woodside were coded for source, there was no indication of the rate of return for the various other sources. This was also considered a limitation of the study.

STUDY PROCEDURE

This was an exploratory study on mother-daughter communication about sexuality, influenced by the research done by Fox (1978, 1979, 1980); Fox and Inazu (1980, 1982) and Inazu and Fox (1980). A questionnaire on mother-daughter sexual communication patterns and a questionnaire on sexual knowledge were administered to both mothers and daughters. In addition, an assertiveness questionnaire to ascertain levels of assertiveness, including communication was given to the mother and a modified version of this questionnaire, designed specifically for adolescents, was given to her daughter. Testing time was approximately 45 minutes, depending on the reading abilities of the respondents. Both mothers' and daughters' responses were kept in strict confidence by coding the questionnaires. All questionnaires were administered within a time frame of six months.

The questionnaires were distributed directly by the obstetrician and his nurse, the social workers (with an accompanying letter assuring confidentiality and that the choice to participate or not would have no effect on the services provided by Alberta Social Services), by the teachers at Terra School (after an explanation by the researcher) and by friends to personal contacts to ensure anonymity.

The sample of adolescent girls who have experienced a pregnancy that was drawn from the Woodside Home in Edmonton, Alberta included present or past residents (within the last six months), girls who were pregnant or who had delivered within the last six months. Each participant was given a copy of the questionnaires with a stamped envelope addressed to the researcher. A letter was given to each participant ensuring her that her decision to participate or not would not in any way influence the services provided at Woodside; the questionnaires were to be anonymous and confidential; the researcher would be the only person with access to the questionnaires; results of the research would be made available to them through Woodside and the researcher would be available to address any issues or concerns related to the research.

The adolescent girls who had not experienced a pregnancy and their mothers were also administered the questionnaires anonymously. Participation was by choice and they were requested to complete the questionnaires separately and to return them in the stamped envelopes addressed to the researcher. This lack of control was considered a limitation of the study.

INSTRUMENTS

The instruments administered were the modified Fox Sexual Communication Questionnaire, the modified Foothills Sexual Knowledge Questionnaire and the Rathus Assertiveness Schedule.

Modified Fox Sexual Communication Questionnaire

The Fox Sexual Communication Questionnaire (see Appendix A) was modified to gather information about age, birth order, level of education, family composition, as well as the original information regarding level of closeness between mother and daughter, mother-daughter sexual communication patterns including amount (if ever) of discussion of sexual topics, timing of discussion (before or after the event), levels of personal comfort discussing sexual matters as well as the perceived comfort of the other, based on research by Fox and Inazu (1980). The degree of agreement with each item was registered on a three point scale, or a yes or no response. Fox and Inazu considered this instrument reliable and valid from their research in 1978, 1980, and 1982.

Modified Foothills Sexual Knowledge Questionnaire

The Foothills Sexual Knowledge Questionnaire (see Appendixes B and C), consists of 46 items designed to test reproductive physiology and contraceptive knowledge, sexual and contraceptive attitudes and behavior, and information about the age of the onset of dating, sources of contraception knowledge, attitudes towards school sex education and availability of contraceptive devices. Respondents also assessed the honesty of teenagers completing the questionnaire.

Meikle and others (1981) assessed the questionnaire's test-retest reliability with biology and nursing students completing the test on two separate occasions. Pearson correlation coefficients were calculated on the reproductive, contraceptive tests as well as the attitude questions for each group tested.

MEANS AND TEST-RETEST CORRELATIONS FOR STUDENT GROUPS

IN THE FOOTHILLS SEXUAL KNOWLEDGE QUESTIONNAIRE

	BIOLOGY STUDENTS (N=46)			NURSING STUDENTS (N=68)		
	Mean Score		Correlation	Mean Score		Correlation
TEST	1	2		1	2	
Reproductive	8.02	8.37	.63	9.87	9.94	.59
Contraceptive	10.72	11.70	.7	12.65	12.79	.53

The correlations for the reproductive and contraceptive tests were lower than expected due in part to a) a narrow range of scores; b) students, the nurses in particular, sought the sexual knowledge they lacked between testing times; and c) some respondents guessed on both tests. However, the test was considered adequate because similar gaps in sexual knowledge were found on both occasions (Meikle, et al., 1980; Meehl, 1972). Validity of the Foothills Sexual Knowledge Questionnaire was determined by administering the questionnaire to six groups selected for their assumed amount of sexual knowledge. On the basis of following results the Foothills Questionnaire was deemed by Meikle and others (1980) to be a valid measure of sexual knowledge.

RESULTS OF VARIOUS GROUPS ON REPRODUCTIVE AND CONTRACEPTIVE TESTS IN THE FOOTHILLS SEXUAL KNOWLEDGE QUESTIONNAIRE

	NO.	TEST SCORES					
	OF	Reproduction (12 pts)			Contraception (19 pts)		
GROUP	SUBJECTS	Mean	SD	Range	Mean	SD	Range
1. Community Nurses	115	9.3	1.28	5-11	13.5	1.61	10-17
2. 1st Year Nursing Students*	100	9.7	1.33	5-12	12.56	1.85	8-17
3. Female Medical Students	25	9.32	1.31	6-12	12.56	1.94	9-16
4. Female Biology Students	48	8.02	1.52	3-12	10.85	2.27	5-14
5. Male Biology Students	18	6.94	2.29	1-11	8.0	3.13	3-13
6. Patients with two or more abortions.	43	6.6	2.30	1-11	9.93	3.21	0-16

*Had a 3-hour educational session on topics two weeks previous.

(Meikle, Pearce, Peitchinis and Psyk, 1981)

This instrument was modified, reducing the number of items measuring sexual knowledge to sixteen as the items related to availability of contraceptive devices were deleted. Individual items remained unchanged. This instrument was chosen for this study because it was considered to be reliable and valid by Meikle and others (1981) when used with adolescents and adults to ascertain sexual knowledge in Calgary. It was assumed to be valid and reliable as although some items were deleted, the remaining items were unchanged.

Rathus Assertiveness Schedule

Rathus (1973) devised a 30 item assertiveness schedule (see Appendix D) to measure degrees of assertiveness having moderate to high test-retest and split-half reliability. Satisfactory validity was reported based on the respondents' observed behavior and personal indications of how they would behave in specific situations requiring assertive behavior. This schedule was used successfully in studies by El-Shamy (1978) with students and by Rathus (1973) with unassertive women. This schedule was used for the mothers in this study.

The Rathus Assertiveness Schedule was tested on preadolescent and adolescent students (Vaal, 1975). The schedule was modified for the students by adjusting the readability of the original schedule from a mid grade 10 level to a low grade 7 level. Vaal (1975) concluded that this schedule, if modified, was a useful assessment of adolescent levels of assertiveness. The modified Rathus Assertiveness Schedule, see Appendix E, was also used with adolescents in a study by Vaal and McCullagh (1977). This modified version of the Rathus Assertivness Schedule was used for the daughters in this study.

After administration, the scores for both schedules were tabulated by changing the signs on items 1, 2, 4, 5, 9, 11, 12, 13, 14, 15, 16, 17, 19, 23, 24, 26, 30 and summing the scores on the 30 items for a total score. Scores on the test could vary from +90 to -90 on both the Rathus Assertiveness Schedule for adults and the modified version for adolescents. In a sample of college students, the womens' scores ranged from +55 to -48 with a score of -8 falling at the 25th percentile, a score of +8 falling at the 50th percentile and a score of +23 falling at the 75th percentile (Nevid & Rathus, 1978).

A search of the literature revealed several assertiveness scales but none was more appropriate for the use with both adult and adolescent females. Thus, the Rathus Assertiveness Schedule was selected as all assertiveness scales have limitations and it is considered reliable and valid when administered to both adolscents and adults to measure assertiveness levels, which includes communication.

EXPERIMENTAL DESIGN

As noted earlier, the questionnaire responses were divided into two major groups:

Group 1 (G1) - Daughters who have experienced an adolescent pregnancy and their mothers; and

Group 3 (G3) - Daughters who have not experienced an adolescent pregnancy and their mothers.

There also were three subgroups:

Group 2 (G2) - Daughters (adolescent girls from Woodside) who have experienced a pregnancy but whose mothers did not respond;

Group 1C (G1C) - Combined responses of all daughters (Groups 1 and 2) who have experienced a pregnancy; and

Group 3C (G3C) - Combined responses of all daughters who have not experienced a pregnancy.

The first question (A) regarding differences between Group 1 and Group 3 with regard to risk factors for an adolescent pregnancy provided information related to age, education, family composition, birth order, sexual knowledge, age at the onset of dating, sexual spontaneity, sources of sexual information, and sex education classes in school.

The first six items on the modified Fox Sexual Communication Questionnaire provided information about the risk factors for an adolescent pregnancy pertaining to the adolescent respondents. The frequency and percentage frequency of the individual response variables were outlined for Group 1, Group 3, and Group 2. The risk factor variables included age, level of education, birth order, and family composition (including the respondents' concept of their mothers). A one-way analysis of variance was performed to assess the mean scores of these three groups to determine if there were any significant differences with respect to age. Ages of the daughters in Group 1C and Group 3C were cross tabulated with their individual educational levels to ascertain the appropriateness of their educational level for their age. All six profile variables yielded nominal data, and a series of chi square tests were computed to test for significant differences between the pairs of these variables. Considering only Group 1C and Group 3C, chi square tests were computed for all six profile variables and t-tests were computed for the age variables to determine significant differences between these two groups.

The first sixteen responses on the modified Foothills Sexual Knowledge Questionnaire were treated as a total score of sexual knowledge. Items 17 to 20 and item 24 on this questionnaire provided information about the other identified risk factors for an adolescent pregnancy including age at the onset of dating, sexual spontaneity, sources of sexual knowledge, and sex education at school. Information about parent-teenage communication about sexuality was provided by 3 items, which included ease of discussion of sexuality and birth control. Each of the risk factors for adolescent pregnancy as well as mother-daughter sexual communication patterns were assessed to ascertain significant differences between Group 1, Group 2 and Group 3, as well as only the daughters, Group 1C and Group 3C.

Frequency and percentage distributions of responses were outlined for each variable for each group. Means and standard deviations were computed for each of the three groups on the total scores from the modified Foothills Sexual Knowledge Questionnaire. A one-way analysis of variance was performed to assess the difference between the mean scores of these three groups to determine if there were any significant differences related to adolescent pregnancy with regard to sexual knowledge. A t-test comparision of the sexual knowledge of Group 1C and Group 3C was also computed. The scores on sexual knowledge for Group 1 and Group 3 were correlated with total general communication, total sexual communnicaton patterns, and assertiveness scores.

The risk for adolescent pregnancy variables from the modified Foothills Sexual Knowledge Questionnaire was outlined in frequency and percentage distribution of responses. A series of chi square tests were computed to test for the significant relationships between the paired mother-daughter responses, Group 1 and Group 3, as well as between the responses of all the daughters, Group 1C and Group 3C. The responses relating to parent-teenage sexual communication from the modified Foothills Sexual Knowledge Questionnaire were analyzed as above with the addition of a correlational analysis. This analysis was performed to determine the degree of relationship between totals on the general communication variables and totals on mother-daughter sexual communication, sexual knowledge, and assertiveness variables.

The second question (B) regarding the comparison of the agreement between mothers' and their daughters' responses concerning their communication about sexuality for Group 1 and Group 3 included assessing the questionnaire results related to the amount of, timing of (before or after the adolescent is involved in the behavior), initiator of, reason for (the result of a conflict), and comfort level in communication about sexuality, as well as assertiveness levels.

The last 43 items on the modified Fox Sexual Communication Questionnaire provided information about the pattern of sexual communication between individual mother and daughter pairs. The focus was on agreement of mother and daughter responses with regard to closeness and sexual communication patterns including amount (if ever discussed), timing of discussion (before or after the event), initiator of the discussion, reason (result of a problem), and levels of personal and perceived mother-daughter comfort in discussing sexual topics. Frequency and percentage distribution of response agreement between mother and daughter were outlined for both mothers and daughters in Group 1 and Group 3. A series of chi square tests were computed to test for significant difference between the distributions of these variables. Pearson correlation coefficients were computed for the variables of closeness to mother or daughter, personal comfort and perceived comfort of mother or daughter discussing sexual topics, and the total scores on the Rathus Assertiveness Scale to ascertain significant relationships in mother and daughter responses.

The third question (C) regarding differences between Group 1 and Group 3 included assessing the questionnaire results related to sexual communication patterns focusing on: amount (number of times), timing (before or after the adolescent is involved in the behavior), initiator of the discussion, reason (result of a conflict), personal comfort, perceived comfort of the mother or daughter, and assertiveness levels.

The mother-daughter sexual communication pattern responses were outlined in frequency and percentage distributions for Groups 1, 2 and 3. Chi square tests were computed to test for significant differences for each variable comparing the paired responses of mothers and their daughters (Group 1 and Group 3), as well as the responses of all the daughters (Group 1C and Group 3C). A one-way analysis of variance was performed on the items relating to closeness, as well as personal and perceived mother or daughter comfort level to determine significant differences between Group 1, Group 2 and Group 3. A t-test comparision was also made on these same variables between Group 1C and Group 3C. Pearson correlation coefficients were also computed using a total sexual communication pattern score for mothers and daughters to indicate relationships between this score and the total scores on general communicaton, sexual knowledge, and assertiveness.

The Rathus Assertiveness Schedule for mothers and for daughters was treated as a total score to provide information about assertive communication. Information about patterns of mother-daughter sexual communication was provided by items 7 to 14 on the modified Fox Sexual Communication Questionnaire, including closeness and sexual discussion regarding amount (if ever discussed), timing (before or after the event), initiator, reason (result of a conflict) and levels of personal and perceived mother or daughter comfort discussing sexual topics.

Frequency and percentage distributions for all Groups 1, 2, and 3 were computed for the Rathus Assertiveness Schedule. The means and standard deviations were computed for these groups to test for significant differences. A t-test comparison of Group 1C and Group 3C was also done. A Pearson correlation coefficient was computed to ascertain the relationship between the total assertiveness score of mothers and daughters to the total general communication score, the total sexual communications score, and the sexual knowledge score.

The variable "honesty in answering" was outlined in frequency and percentage distributions. Chi square comparisons were also made for Group 1, Group 2 and Group 3, as well as for Group 1C and Group 3C. A one-way analysis of variance was performed on the Groups 1, 2 and 3 and a t-test comparison was made between the Groups 1C and 3C to test for significant differences in perception of the degree of honesty of respondents in answering questionnaire items.

CHAPTER IV

OBSERVATIONS AND RESULTS

ANALYSIS OF THE RISK FACTORS FOR AN ADOLESCENT PREGNANCY

This study assessed the risk factors for a pregnancy in adolescence and mother-daughter communication about sexuality. Question A assessed risk factors including age, level of education, family composition, birth order, sexual knowledge, age at the onset of dating, sexual spontaneity, sources of sexual information, and sex education classes in school.

A frequency and percentage distribution of the ages of the daughters and the mothers was computed (see Table 1). The average age for the daughters in Group 1 was 16. The average age for the daughters in Group 3 was 14. The average age for the mothers in Group 1 was 44 and the average age of the mothers in Group 3 was 41. The average of the daughters in Group 2 was also 16.

Table 2 presents the frequency and percentage distributions of the educational levels of the daughters and the mothers. Of the daughters in Group 1, 9.1 percent reported an educational level of less than grade 5; 13.6 percent reported an educational level of grade 9; 22.7 percent reported an educational level of grade 10; 36.4 percent reported an educational level of grade 11; 9.1 percent reported an educational level of grade 12; and 9.1 percent reported an educational

TABLE 1

FREQUENCY AND PERCENTAGE DISTRIBUTION OF AGE OF DAUGHTERS AND MOTHERS

Daughters

	GROUP 1		GROUP 2	GROUP 3	
Age	Daughter	Mother	Daughter	Daughter	Mother
11	0		0	(1) 3.2%	
12	0		0	(4) 12.9%	
13	0		0	(7) 22.6%	
14	0		0	(3) 9.7%	
15	(7) 31.8%		(2) 16.7%	(5) 16.1%	
16	(4) 18.2%		(2) 16.7%	(4) 12.9%	
17	(8) 36.4%		(4) 33.3%	(6) 19.4%	
18	(3) 13.6%		(4) 33.3%	0	
19	0		0	(1) 3.2%	
mean	16.318		16.833	14.581	

Mothers

	GROUP 1		GROUP 2	GROUP 3	
Age	Daughter	Mother	Daughter	Daughter	Mother
29		0			(1) 3.2%
30		(1) 4.5%			0
32		0			(1) 3.2%
35		0			(1) 3.2%
36		0			(1) 3.2%
37		(3) 13.6%			(2) 6.5%
38		(1) 4.5%			(3) 9.7%
39		(1) 4.5%			(2) 6.5%
40		(2) 9.1%			(3) 9.7%
41		(1) 4.5%			(3) 9.7%
42		(2) 9.1%			(2) 6.5%
43		(1) 4.5%			(2) 6.5%
44		(2) 9.1%			(3) 9.7%
45		(1) 4.5%			(1) 3.2%
47		(1) 4.5%			(2) 6.5%
48		(2) 9.1%			0
49		0 %			(2) 6.5%
50		(1) 4.5%			(1) 3.2%
51		(1) 4.5%			0
52		(1) 4.5%			0
67		0			(1) 3.2%
77		(1) 4.5%			0
mean		44.182			41.839

TABLE 2

FREQUENCY AND PERCENTAGE DISTRIBUTION OF EDUCATION OF MOTHERS AND DAUGHTERS

Daughter

	GROUP 1		GROUP 2	GROUP 3	
	Daughter	Mother	Daughter	Daughter	Mother
less than grade 5	(2) 9.1%	0	0	0	0
grade 6	0	0	0	(2) 6.5%	(2) 6.5%
grade 7	0	0	0	(6) 19.4%	(8) 25.8%
grade 8	0	(1) 4.5%	0	(5) 16.1%	(4) 12.9%
grade 9	(3) 13.6%	(4) 18.2%	(3) 25.0%	(2) 6.5%	(2) 6.5%
grade 10	(5) 22.7%	(5) 22.7%	(3) 25.0%	(4) 12.9%	(2) 6.5%
grade 11	(8) 36.4%	(6) 27.3%	(3) 25.0%	(7) 22.6%	(6) 19.4%
grade 12	(2) 9.1%	(4) 18.2%	(3) 25.0%	(5) 16.1%	(6) 19.4%
special classes	(2) 9.1%	(2) 9.1%	0	0	0
vocational classes	0	0	0	0	0
other	0	0	0	0	0
no answer	0	0	0	0	(1) 3.2%
n	22	22	12	31	31

Mother

	GROUP 1		GROUP 2	GROUP 3	
	Daughter	Mother	Daughter	Daughter	Mother
high school or less	(7) 31.8%	(6) 27.2%	(4) 33.3%	(8) 25.8%	(7) 22.6%
post secondary	(10) 45.5%	(16) 72.7%	(3) 25.0%	(13) 41.9%	(15) 48.4%
university degree	(4) 18.2%	0	(2) 16.7%	(9) 29.0%	(9) 29.0%
no answer	(1) 4.5%		(3) 25.0%	~~(1) 3.2%~~	0
n	22	22	12	31	31

level as special class. In Group 2, 25.0 percent reported an educational level of grade 9; 25.0 percent reported an educational level of grade 10; 25.0 percent reported an educational level of grade 11; and 25.0 percent reported an educational level of grade 12. Of the daughters in Group 3, 6.5 percent reported an educational level of grade 6; 19.4 percent reported an educational level of grade 7; 16.1 percent reported an educational level of grade 8; 6.5 percent reported an educational level of grade 9; 12.9 percent reported an educational level of grade 10; 22.6 percent reported an educational level of grade 11; and 16.1 percent reported an educational level of grade 12. There were discrepancies in Group 1 and Group 3 between the educational level reported by the daughter and the daughter's educational level as reported by her mother. For the purpose of this study, the daughters' report of their level of education was used.

Owing to a typing error in the questionnaire, the mother's level of education was grouped into high school or less, postsecondary, and university degree. In Group 1, 27.2 percent of the mothers reported an educational level of high school or less, and 72.7 percent reported a postsecondary level of education. In Group 3, 22.6 percent reported an educational level of high school or less, 48.4 percent reported a postsecondary educational level, and 29.0 percent reported a university degree educational level. There was some discrepancy between the mothers' reported level of education and the daughters' perception of their mothers' level of education. The mothers' report of their level of education was used for the purpose of this study.

Table 3 presents the frequency and percentage distributions of family composition. The majority of the respondents in each group came from a family composed of a mother, father, and children. In Group 1, 54.5 percent of the daughters and 68.2 percent of the mothers reported a family composition of mother, father, and children. In the same group, 27.3 percent of the daughters and 13.6 percent of the mothers reported a family composition of mother only and children, with 18.2 percent of the daughters and 18.2 percent of the mothers reporting a family composition of mother, stepfather, and children. In Group 2, 66.7 percent of the girls reported a family composition of mother, father, and children. In the same group, 16.7 percent reported a family composition of mother, stepfather, and children with 16.7 percent reporting a family composition of stepmother, father, and children. In Group 3, 64.5 percent of daughters and 64.5 percent of mothers reported a family composition of mother, father, and children. In this same group, 16.1 percent of the daughters and 19.4 percent of the mothers reported a family composition of mother only and children, with 12.9 percent of the daughters and 12.9 percent of the mothers reporting a family composition of mother, stepfather, and children, while 6.5 percent of the daughters and 3.2 percent of the mothers reported a family composition of stepmother, father, and children. There were discrepancies in the mothers' and daughters' concepts of family composition in both groups. This discrepancy was greater for Group 1 where 13.6 percent of the mothers and daughters did not agree, whereas in Group 3, 3.2 percent of the mothers and daughters did not agree on family composition.

TABLE 3

FREQUENCY AND PERCENTAGE DISTRIBUTION OF FAMILY COMPOSITION

	GROUP 1		GROUP 2	GROUP 3	
	Daughter	Mother	Daughter	Daughter	Mother
mother, father, & children	(12) 54.5%	(15) 68.2%	(8) 66.7%	(20) 64.5%	(20) 64.5%
mother only & children	(6) 27.3%	(3) 13.6%	0	(5) 16.1%	(6) 19.4%
mother, stepfather, & children	(4) 18.2%	(4) 18.2%	(2) 16.7%	(4) 12.9%	(4) 12.9%
stepmother, father, & children	0	0	(2) 16.7%	(2) 6.5%	(1) 3.2%
n	22	22	12	31	31

FREQUENCY AND PERCENTAGE DISTRIBUTION OF 'MOTHER' CONCEPT

	GROUP 1		GROUP 2	GROUP 3	
	Daughter	Mother	Daughter	Daughter	Mother
natural mother	(20) 90.9%	(20) 90.9%	(9) 75.0%	(29) 93.5%	(29) 93.5%
foster mother	(1) 4.5%	(1) 4.5%	(1) 8.3%	(1) 3.2%	(1) 3.2%
grand mother	(1) 4.5%	(1) 4.5%	0	0	0
other relative	0	0	(2) 16.7%	(1) 3.2%	(1) 3.2%
n	22	22	12	31	31

TABLE 4

FREQUENCY AND PERCENTAGE DISTRIBUTION OF FAMILY BIRTH ORDER

	GROUP 1		GROUP 2	GROUP 3	
	Daughter	Mother	Daughter	Daughter	Mother
first born	(7) 31.8%	(7) 31.8%	(3) 25.0%	(15) 48.4%	(14) 45.2%
second born	(8) 36.4%	(7) 31.8%	(3) 25.0%	(6) 19.4%	(7) 22.6%
other	(7) 31.8%	(8) 36.4%	(6) 50.0%	(10) 32.3%	(10) 32.3%
n	22	22	12	31	31

As part of family composition, the respondents were also asked to describe their concept of "mother." In Group 1, 90.9 percent of mothers and daughters agreed that the daughter was referring to her natural mother. In that same group, 4.5 percent of mothers and daughters agreed that the mother concept was a foster mother and 4.5 percent of mothers and daughters agreed that the mother concept was grandmother. In Group 2, 75.0 percent of the girls indicated that their concept of mother was their natural mother, 8.3 percent indicated the mother concept was a foster mother and 16.7 percent indicated their concept of mother was another relative. In Group 3, 93.5 percent of mothers and daughters agreed that the concept of mother was the natural mother. In that same group 3.2 percent of mothers and daughters agreed that the concept of mother was a foster mother and 3.2 percent of mothers and daughters agreed that the concept of mother was another relative.

Table 4 presents frequency and percentage distributions for family birth order. Of the daughters in Group 1, 31.8 percent were the first born, 36.4 percent were the second born, and 31.8 percent had another ordinal position in the family. Of the girls in Group 2, 25.0 percent were the first born, 25.0 percent were the second born, and 50.0 percent had another ordinal position in the family. Of the daughters in Group 3, 48.4 percent were the first born, 19.4 percent were the second born, and 32.3 percent had another ordinal position in the family.

The one-way analysis of variance performed on the ages of the daughters in Groups 1, 2 and 3 indicated that the adolescent females who had experienced a pregnancy (Group 1 and Group 2) were significantly older than those who had not experienced a pregnancy (Group 3) (see Table 5). A t-test comparision of all daughters also indicated this age difference with Group 1C being significantly older than Group 3C (see Table 6). This age difference was also found on a chi square comparision of Group 1C and Group 3C, with the girls in Group 1C being significantly older than those in Groups 3C. A chi square comparison of the daughters' level of education both paired with their mothers' (Group 1 and Group 3) and as daughters only (Group 1C and Group 3C) indicated a significant difference in their levels of education, with the girls who had experienced a pregnancy (Group 1 and Group 1C) reporting a significantly higher level of education than those who had not experienced a pregnancy (Group 3 and Groups 3C) (see Table 7). This was considered to be an artifact of the sample because the daughters who had not experienced a pregnancy were significantly younger.

The profile variable of mothers' level of education (see Table 7) also yielded a significant difference between Group 1 and Group 3 when subjected to a chi square comparison. The mothers in Group 3 reported significantly higher levels of education than the mothers in Group 1. A chi square comparison of paired mother-daughter responses in Group 1 and Group 3 as well as the daughters' responses alone in Group 1C and Group 3C indicated no significant differences between groups for the at risk variables birth order and family composition (including the

TABLE 5

ONE-WAY ANALYSIS OF VARIANCE

Comparison of the ages of daughters in Group 1, Group 2 and Group 3.

Variable		n	mean	s.d.	d.f.	f	p	Direction
age	G1	22	16.3182	1.0861				
	G2	12	16.8333	1.1146	64	11.9741	0.0000*	G1&2>G3
	G3	31	14.5806	2.0129				

TABLE 6

t TEST

Comparison of the ages of all daughters in Group 1C and Group 3C

Variable		n	mean	s.d.	t	p	Direction
age	G1C	34	16.5000	1.108	4.82	0.0000*	G1C>G3C
	G3C	31	14.5806	2.013			

* Significance .05

TABLE 7

CHI SQUARE

Comparison of paired mother and daughter responses related to risk factors for an adolescent pregnancy for Group 1 and Group 3 as well as Group 1C and Group 3C

	(Group 1 and Group 3)				(Group 1C and Group 3C)			
Variable	Chi-square	d.f.	Significance	Direction	Chi-square	d.f.	Significance	Direction
age	15.51920	21	0.7960		26.46076	8	0.0009*	G1C>G3C
birth order	1.05775	2	0.5893		2.72924	2	0.2555	
family composition	1.22120	3	0.7479		0.35320	3	0.9497	
meaning of mother	2.18785	3	0.5343		1.53147	3	0.6750	
mother's level of education	8.06999	3	0.0325*	G1<G3				
daughter's level of education	15.28334	7	0.0325*	G1>G3	21.12877	8	0.0068*	G1C>G3C

* Significance .05

meaning of the term mother).

The age and level of education of all the daughters (Group 1C and Group 3C) were cross tabulated and compared (see Table 8). In Group 1C age was not related to educational grade level, whereas in Group 3C an increase in age was related to an appropriately higher grade level. The cross tabulation also indicated more age appropriate educational levels for the daughters who had not experienced a pregnancy (Group 3C).

Frequency and percentage distribution of the responses to the Foothills Sexual Knowledge Questionnaire were assessed for each group (see Appendix F). The total scores (out of a possible 16) on the Foothills Sexual Knowledge Questionnaire varied in frequency and percentage distribution with a mean of 8.645 and a standard deviation of 3.601 for the daughters in Group 1, and a mean of 11.000 and a standard deviation of 2.236 for the mothers in Group 1. The total scores for the daughters in Group 2 yielded a mean of 11.083 with a standard deviation of 1.379. The total scores for the daughters in Group 3 yielded a mean of 10.64 with a standard deviation of 3.416, with the total scores of the mothers in Group 3 yielding a mean of 11.136 and a standard deviation of 2.145. These results indicated that the daughters who had experienced an adolescent pregnancy had a higher mean score than the daughters who had not experienced an adolescent pregnancy. When these results were subjected to a one-way analysis of variance (see Table 9), there was a significant difference between Groups 2 and 3, with Group 2 scoring significantly higher on the

TABLE 8

CROSS TABULATION OF AGE AND LEVEL OF EDUCATION

Group 1C

age	less than grade 5	grade 6	grade 7	grade 8	grade 9	grade 10	grade 11	grade 12	special classes
15	(1) 2.9%	0	0	0	(3) 8.8%	(3) 8.8%	(1) 2.9%	0	(1) 2.9%
16	0	0	0	0	(1) 2.9%	(3) 8.8%	(2) 5.9%	0	0
17	0	0	0	0	0	(1) 2.9%	(6) 17.6%	(4) 11.8%	(1) 2.9%
18	(1) 2.9%	0	0	0	(2) 5.9%	(1) 2.9%	(2) 5.9%	(1) 2.9%	0

n = 34
Chi Square = 18.53962
DF = 15
Significance = 0.2354

Group 3C

age	less than grade 5	grade 6	grade 7	grade 8	grade 9	grade 10	grade 11	grade 12	special classes
11	0	(1) 3.2%	0	0	0	0	0	0	0
12	0	(1) 3.2%	(2) 6.5%	0	0	0	(1) 3.2%	0	0
13	0	0	(4) 12.9%	(3) 9.7%	0	0	0	0	0
14	0	0	0	(2) 6.5%	(1) 3.2%	0	0	0	0
15	0	0	0	0	(1) 3.2%	(3) 9.7%	(1) 3.2%	0	0
16	0	0	0	0	0	(1) 3.2%	(3) 9.7%	0	0
17	0	0	0	0	0	0	(2) 6.5%	(4) 12.9%	0
18	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	(1) 3.2%	0

n = 31
Chi Square = 83.38629
DF = 42
Significance = 0.0002*

Foothills Sexual Knowledge Questionnaire. When the daughters (Group 1C and Group 3C) were compared using a t-test comparison, Group 1C scored significantly higher than Group 3C on the sexual knowledge variable (see Table 10).

Frequency and percentage distribution of the other risk factor responses were calculated for all the groups (see Appendix G). These revealed that 50 percent of the daughters in Group 1 and 66.6 percent of the girls in Group 2, as compared with 32.3 percent of the daughters in Group 3, began dating before the age of 13 years. It was also revealed that 22.7 percent of the daughters in Group 1, 41.7 percent of the daughters in Group 2 and 35.5 percent of the daughters in Group 3 agreed that sex should be completely spontaneous. 36.4 percent of the mothers in Group 1 and 35.5 percent of the mothers in Group 3 also agreed that sex should be completely spontaneous.

The frequency and percentage distribution of sources of sexual information (see Appendix H), indicated that the majority of the girls in Groups 1 and 2 indicated that their primary source of information regarding sexuality was from friends and classmates. In contrast, the majority of the girls in Group 3 indicated that their mother was the main source of their information regarding sexuality. These results were consistent with responses pertaining to the main source of information regarding contraception. Although their mother was not listed as the main source of information about sexuality, over 50 percent of the girls in Groups 1 and 2 did indicate that their mother was a source of sexual information. Generally, the girls in Group 2

TABLE 9

ONE-WAY ANALYSIS OF VARIANCE

Comparison of sexual knowledge for Group 1, Group 2 and Group 3

Variable		n	mean	s.d.	d.f.	f	p	Direction
Foothills sexual knowledge	G1	22	10.3636	3.4163				
	G2	12	11.0833	1.3790	64	3.1757	0.0486*	G2>G3
	G3	31	8.6452	3.6014				

TABLE 10

t TEST

Comparison of sexual knowledge for Group 1C and Group 3C

	Group 1C			Group 3C					
Variable	n	mean	s.d.	n	mean	s.d.	t	p	Direction
Foothills sexual knowledge	34	10.6176	2.861	31	8.6452	3.601	2.46	0.017*	G1C>G3C

* Significance .05

reported the greatest number of sources of information regarding sexuality and contraception. This may be explained by the fact that this group was in an institution for unwed mothers where there was emphasis on sex education. The daughters in Group 3 indicated more sources of information regarding sexuality and birth control than did the daughters in Group 1.

A chi square comparison of paired mother and daughter responses was computed for the above risk factors in Groups 1 and 3, as well as a comparison of daughters, Groups 1C and 3C (see Table 11). No significant differences with regard to the risk factors of spontaneity or sexual education at school were noted; however, the girls Group in 1C began dating significantly earlier than the girls in Group 3C. In the listing of sources of sexual information, the chi square comparison indicated that the girls in Group 3 identified their mother as a source of sexual information significantly more than Group 1. This was also true when all the daughters (Group 1C and 3C) were compared. The responses of Group 3 indicated friends or classmates as well as books and pamphlets as sources of sexual information significantly more than Group 1. The girls in Group 3 also indicated friends or classmates, doctors, counselors, teachers, and books and pamphlets as sources of information on contraception significantly more often than Group 1. Group 3 mothers and daughters reported significantly more sources of sexual, as well as contraception, information.

TABLE 11

CHI SQUARE

Significant response comparison of risk factors for an adolescent pregnancy for Group 1 and Group 3 as well as Group1C and Group 3C

	(Group 1 and Group 3)				(Group 1C and Group 3C)			
Variable	Chi-square	d.f.	Significance	Direction	Chi-square	d.f.	Significance	Direction
age at onset of dating					16.26284	4	0.0027*	G1C>G3C
source of sexual information:								
mother	7.15921	2	0.0279*	G1<G3	7.34942	1	0.0067*	G1C<G3C
friends or classmates	13.65308	2	0.0011*	G1<G3				
books and pamphlets	19.16869	2	0.0001*	G1<G3				
source of birth control information:								
friends or classmates	7.72772	2	0.0210*	G1<G3				
doctor, counselor, teacher	17.25708	2	0.0002*	G1<G3				
books and pamphlets	18.07893	2	0.0001*	G1<G3				

* Significance .05

ANALYSIS OF AGREEMENT BETWEEN MOTHER AND DAUGHTER REGARDING THEIR COMMUNICATION ABOUT SEXUALITY

Frequency and percentage distribution of response agreement between the mother and her daughter regarding sexual topics were calculated for both groups (see Appendix I). It is interesting to note that when asked how close they felt to their mother or daughter, only 4.5 percent of the mothers and daughters in Group 1 agreed that they both felt very close, whereas 51.6 percent of the mothers and daughters in Group 3 agreed that they both felt very close. Generally, mothers and daughters in Group 3 agreed that they had discussed sexual topics, that this discussion took place before the sexual event on the part of the adolescent, that the sexual topic was initiated by the mother, that the discussion was not the result of a problem, and that their own as well as the perceived comfort of their mother or daughter in discussing sexual topics was more positive when compared with Group 1.

A chi square comparison was performed between the agreement of the mother's and her daughter's responses on the mother-daughter sexual communication items on the Fox Sexual Communication Questionnaire for both Group 1 and Group 3 (see Appendix J). A significant difference on the agreement or the disagreement of the mother's and her daughter's responses indicated only a similar perception of communication, not the positive or negative aspects of this communication. The mothers and their daughters in Group 1 agreed on their perception of the communication of 7 of 42 items, or an 17 percent total. They agreed significantly on having discussed dating, boyfriends, and sexual intercourse; on having discussed birth control before or after the event; on having discussed menstruation and conception as the result of a problem; and on their personal comfort level discussing menstruation and birth control (see Table 12).

The mothers and their daughters in Group 3 significantly agreed on having discussed menstruation, dating and boyfriends, sexual intercourse, conception, contraception, and morality; on having discussed menstruation, sexual intercourse, conception, and contraception in the last 6 months; on having discussed menstruation, dating and boyfriends, sexual intercourse, conception, and contraception before or after the event; on who initiated the discussion of menstruation, dating and boyfriends, sexual intercourse, conception, and contraception; on having discussed menstruation as the result of a problem; and on the perceived mother's or daughter's comfort level discussing sexual intercourse and conception. Thus mothers and their daughters in Group 3 agreed on 22 of 42 variables, or on 52 percent of the variables. These results indicated that mothers and their daughters in Group 3 agreed significantly more often than mothers and their daughters in Group 1 regarding similarity of perception of sexual communication.

Pearson correlation coefficients were also computed to ascertain relationships between paired mother-and-daughter responses for Groups 1 and 3 (see Table 13). These results indicated that in Group 1, there was a significant relationship between mothers' and daughters'

TABLE 12

CHI SQUARE

Significant results of a comparison between agreement regarding communication about sexuality for Group 1 and Group 3

Variable	Group 1 (n=22) Chi-square	Group 1 (n=22) d.f.	Group 1 (n=22) Significance	Group 3 (n=31) Chi-square	Group 3 (n=31) d.f.	Group 3 (n=31) Significance
mother or daughter ever discussed:						
menstruation				4.24112	1	0.0395*
dating and boyfriends	8.04433	1	0.0046*	7.33553	1	0.0068*
sexual intercourse				10.68700	1	0.0011*
conception				4.83136	1	0.0279*
birth control				7.35000	1	0.0067*
discussed in last six months:						
menstruation				6.24218	1	0.0125*
sexual intercourse				13.50719	1	0.0002*
conception				8.87494	1	0.0029*
birth control				5.61774	1	0.0178*
discussed before or after the event:						
menstruation				10.68307	4	0.0304*
dating and boyfriends				32.83098	4	0.0002*
sexual intercourse				14.01006	2	0.0009*
conception				11.63488	2	0.0030*
birth control	12.30357	4	0.0152*	15.23785	4	0.0042*
who initiated discussion of:						
menstruation				10.78070	4	0.0291*
dating and boyfriends				20.45195	4	0.0004*
sexual intercourse				20.26632	4	0.0004*
conception				22.53015	4	0.0002*
birth control				17.97582	4	0.0012*
a problem resulted in discussion of:						
menstruation				9.26885	2	0.0097*
sexual intercourse	2.83260	1	0.0924*			
conception	3.93750	1	0.0472*			
own comfort discussing:						
menstruation	11.70513	4	0.0197*			
birth control	9.65556	4	0.0466*			
mother's or daughter's comfort discussing:						
sexual intercourse				16.50000	4	0.0024*
conception				13.67882	4	0.0084*
birth control				11.35714	4	0.0228*

* Significance .05

TABLE 13

PEARSON CORRELATION COEFFICIENTS

Significant correlations regarding mother and daughter agreement on their communication about sexuality

Variable	Group 1 (n=22)	Group 3 (n=31)
own comfort discussing:		
menstruation	0.5636*	
sexual intercourse	0.4915*	0.3954*
conception	0.5437*	
mother's, daughter's comfort discussing:		
menstruation	0.5227*	0.4580*
sexual intercourse		0.6568*
conception		0.6017*
birth control	0.4966*	0.4672*
Rathus assertiveness schedule	0.5018*	0.5600*

* Significance .05

responses on the items assessing one's own level of comfort in discussing menstruation, sexual intercourse, conception, and contraception. There was also a significant relationship between their responses on the perceived comfort level of the other in discussing menstruation and contraception. The mothers' responses on the Rathus Assertiveness Schedule correlated significantly with the daughters' responses on the Rathus Assertiveness Schedule measuring effective communication. There was a significant relationship between the mothers' and their daughters' responses in Group 3 on the items assessing their personal comfort level discussing sexual intercourse. A significant relationship was found between the mothers' and daughters' responses on the variables assessing perceived mother's or daughter's comfort level discussing menstruation, sexual intercourse, conception, and contraception. The mothers' responses on the Rathus Assertiveness Schedule correlated with the daughters' responses on this scale in Group 3 also. These responses indicated that there was a relationship between the mother's and her daughter's responses without giving an indication as to the positive and negative aspects of this relationship and how it specifically related to their communication. These results also indicated that there was a significant relationship between the mothers' and their daughters' paired responses in both groups on the Rathus Assertiveness Scale.

ANALYSIS OF THE DIFFERENCES BETWEEN GROUPS WITH REGARD TO MOTHER-DAUGHTER COMMUNICATION ABOUT SEXUALITY AND ASSERTIVENESS LEVELS

Frequency and percentage distributions of responses related to mother-daughter sexual communication were calculated from the Fox Sexual Communication Questionaire (see Appendix K). When asked how close they felt to their mothers, only 40.9 percent of the daughters in Group 1 and 33.3 percent of the girls in Group 2, as compared to 74.2 percent of the daughters in Group 3 responded that they felt very close. When compared with Groups 1 and 2, more daughters in Group 3 indicated that they had discussed menstruation, dating and boyfriends, sexual intercourse, conception, contraception, and morality. More daughters in Group 3 reported that they had discussed menstruation, dating and boyfriends, and morality in the last six months than the daughters in Groups 1 and 2. The daughters in Groups 1 and 2, reported that they had discussed sexual intercourse, conception, and contraception in the last six months more often than Group 3. Menstruation, dating and boyfriends, sexual intercourse, conception, contraception, and morality were discussed more often before the sexual behavior by the daughters in Group 3 than by the daughters in Groups 1 and 2. Wide discrepancies were noted between the mothers' and the daughters' responses on who initiated the discussion of menstruation, dating and boyfriends, sexual intercourse, conception, contraception, and morality. Generally, the responses indicated that the mother initiated sexual discussion, especially the discussion of morality.

The daughters in Groups 1 and 2 more often reported that the discussion of menstruation, dating and boyfriends, sexual intercourse, conception, contraception, and morality was the result of a problem than did the daughters in Group 3. Mothers and daughters in Group 3 consistently reported a higher comfort level discussing menstruation, dating and boyfriends, sexual intercourse, conception, contraception, and morality than did those in Groups 1 and 2. Mothers and daughters in Group 3 also reported a higher level of perceived comfort of the other in discussing menstruation, dating and boyfriends, sexual intercourse, conception, contraception, and morality than mothers and daughters in Groups 1 and 2. Generally, mothers and daughters in Group 3 reported a more positive communication pattern than Groups 1 and 2. These results also indicated discrepancies in perceptions of communication about sexual matters between mothers and their daughters in both groups.

A series of chi square tests were computed for the paired mother-and-daughter responses in Groups 1 and 3 as well as those of all daughters in Groups 1C and 3C (see Appendixes L and M). The significant results (see Table 14) indicated that the daughters in Group 3C felt significantly closer to their mothers than did the daughters in Group 1C. The daughters in Group 3C reported discussing dating and boyfriends in the last six months significantly more than did the daughters in Group 1C. The paired responses in Group 3 indicated that this group had discussed contraception significantly more in the last six months than had Group 1. Menstruation and sexual intercourse were discussed with their mothers before the event

TABLE 14

CHI SQUARE

Comparison of responses regarding mother-daughter communication about sexuality for Group 1 and Group 3 as well as Group 1C and Group 3C

	(Group 1 and Group 3)				(Group 1C and Group 3C)			
Variable	Chi-square	d.f.	Significance	Direction	Chi-square	d.f.	Significance	Direction
closeness					8.13931	2	0.0104*	G1C<G3C
discussed in the last six months:								
dating and boyfriends					4.72160	1	0.0298*	G1C<G3C
birth control	8.43281	1	0.0037*	G1<G3				
discussed before or after the event:								
menstruation					8.11114	2	0.0173*	G1C<G3C
sexual intercourse					12.19326	2	0.0023*	G1C<G3C
problem resulted in discussion of:								
dating and boyfriends	6.62329	1	0.0101*	G1>G3				
sexual intercourse	5.58805	1	0.0181*	G1>G3	5.35413	1	0.0207*	G1C>G3C
conception					8.34539	1	0.0039*	G1C>G3C
birth control	5.35226	1	0.0207*	G1>G3	4.73654	1	0.0295*	G1C>G3C
morality	7.84959	1	0.0451*	G1>G3				
own comfort discussing:								
dating and boyfriends	6.19095	2	0.0451*	G1<G3				
birth control					8.44506	2	0.0147*	G1C<G3C
mother, daughter's comfort discussing:								
sexual intercourse					8.51178	2	0.0142*	G1C<G3C
conception	7.80576	2	0.0202*	G1<G3				
morality	11.94074	2	0.0026*	G1<G3				

* Significance .05

significantly more by the daughters in Group 3C than by the daughters in Group 1C. The discussion of dating and boyfriends and sexual intercourse as the result of a problem was reported significantly more often by Group 1 than by Group 3. Group 1C daughters also reported that the discussion of sexual intercourse was the result of a problem significantly more than did Group 3C. The discussion of conception and contraception was reported as the result of a problem significantly more often by the daughters in Group 1C than by those in Group 3C. Group 1 also reported that contraception and morality were discussed as the result of a problem significantly more than did Group 3.

Group 3 reported significantly more comfort discussing dating and boyfriends than did Group 1, whereas Group 3C reported significantly more comfort discussing contraception than did the daughters in Group 1C. The perceived mother's or daughter's level of comfort in discussing sexual intercourse was significantly higher for the daughters of Group 3C when compared to the girls in Group 1C. The perceived mother's or daughter's comfort in discussing conception or morality was significantly higher for the paired responses in Group 3 than it was in the responses of Group 1. These results indicated a more positive communication pattern between mothers and daughters who had not experienced an adolescent pregnancy (Group 3).

A one-way analysis of variance compared the responses of mothers and their daughters in Groups 1, 2, and 3 (see Table 15). These results indicated that the mothers and daughters in Group 3 felt significantly closer than did the mothers and daughters in Groups 1 and

TABLE 15

ONE-WAY ANALYSIS OF VARIANCE

Comparison of responses regarding comfort discussing sexual topics for
Group 1, Group 2 and Group 3

Variable		n	mean	s.d.	d.f.	f	p	Direction
Closeness to mother or daughter	G1	22	1.2727	0.7025				
	G2	12	1.0833	0.7930	64	5.3071	0.0075*	G1&2<G3
	G3	31	1.7097	0.5287				
Own comfort discussing: birth control	G1	22	0.7727	0.7516				
	G2	12	0.5833	0.7930	63	3.6095	0.0330*	G2<G3
	G3	30	1.1667	0.6477				
Mother or daughter's comfort discussing: sexual intercourse	G1	22	0.6364	0.8477				
	G2	12	0.3333	0.6513	63	2.8367	0.0064*	G2<G3
	G3	30	0.9333	0.7397				

* Significance .05

2. The mothers and daughters in Group 3 also felt more comfortable discussing contraception than did the daughters in Group 2. Mothers and daughters in Group 3 perceived the comfort level of the other in discussing sexual intercourse significantly higher than did Group 2. These results indicated a closeness as well as more comfort in discussing contraception and sexual intercourse on the part of mothers and daughters who had not experienced an adolescent pregnancy (Group 3).

A t-test comparison was conducted with all daughters in Groups 1C and 3C (see Table 16). These results indicated that the daughters in Group 3C felt significantly closer to their mothers as well as more comfortable discussing sexual intercourse and contraception than did the daughters in Group 1C. The daughters in Group 3C also tended to perceive their mothers as being more comfortable discussing sexual intercourse than did the daughters of Group 1C.

Pearson correlation coefficients were also computed using the total sexual communication pattern score for mothers and daughters to indicate the relationships between that score and the total score on general communication, sexual knowledge, and assertiveness levels (see Appendix N). There was significant correlation between the total score of mothers responses and daughters responses on the modified Fox Sexual Communication Questionnaire (see Table 17). There was also a significant relationship for Group 1 daughters' scores on the modified Rathus Assertiveness Schedule and the total scores on the modified Fox Sexual Communication Questionnaire for both daughters and mothers

TABLE 16

t TEST

Comparison of all daughters regarding comfort discussing sexual topics for Group 1C and Group 3C

	Group 1C			Group 3C					
	n	mean	s.d.	n	mean	s.d.	t	p	Direction
Closeness to mother or daughter	34	1.2059	0.729	31	1.7097	0.529	-3.16	0.002*	G1C<G3C
Own comfort discussing:									
sexual intercourse	34	0.3824	0.652	30	0.7333	0.740	-2.02	0.048*	G1C<G3C
birth control	34	0.7059	0.760	30	1.1667	0.648	-2.59	0.012*	G1C<G3C
Mother or daughter's comfort discussing sexual intercourse	34	0.5294	0.788	30	0.9333	0.740	-2.11	0.039*	G1C<G3C

* Significance .05

TABLE 17

PEARSON CORRELATION COEFFICIENTS

Significant correlations with regard to mother-daughter communication for Group 1 and Group 3

Group 1 (n=22)

	Comm2d	Comm2m
Comm2d		
Comm2m	.6788*	
dRathus	.4330*	.4359*
mRathus		

Group 3 (n=31)

	Comm2d	Comm2m
Comm2d		
Comm2m	.7468*	
fhd		
fhm	.5345*	.6946*

Comm2d: Communication responses Fox - daughters
Comm2m: Communication responses Fox - mothers
dRathus: Rathus Assertiveness Schedule - daughters
mRathus: Rathus Assertiveness Schedule - mothers
fhd : Foothills sexual knowledge - daughters
fhm : Foothills sexual knowledge - mothers

* Significance .05

responses. A significant relationship was found between the mothers' and daughters' total sexual communication scores on the modified Fox Sexual Questionnaire for Group 3 also. The mothers' and daughters' total scores on the modified Fox Sexual Communication Questionnaire for Group 3 were also significantly correlated with the mothers' total scores on the Foothills Sexual Knowledge Questionnaire. These results indicated a relationship between the sexual communication responses of mothers and daughters in both groups. In Group 1 there was a relationship between the sexual communication scores and the assertiveness scores, whereas in Group 3 there was a relationship between the sexual communication scores and the sexual knowledge scores.

Frequency and percentage distributions of the scores on the Rathus Assertiveness Schedule (see Appendix O) revealed a wide range of scores for mothers and daughters in all groups. The mean response for the daughters in Group 1 was -8.864 with a standard deviation of 28.911, whereas the mean of the mothers' responses in Group 1 was -15.227, with a standard deviation of 26.842. The scores for the daughters in Group 2 resulted in a mean of -10.667 and a standard deviation of 26.404. The Rathus Assertiveness Schedule scores for the daughters in Group 3 had a mean of +7.194, with a standard deviation of 27.138, whereas the mothers in Group 3 had a mean of -1.935, with a standard deviation of 22.574. Using the Rathus norms, a score of +8 would be in the 50th percentile, placing these scores all close to average for the daughters and lower than average for the mothers. These responses indicated a wide variety of scores for both mothers and daughters in all 3 groups, with the scores for both mothers and daughters in Group 3 being slightly higher than both the mothers and daughters in Groups 1 and 2.

A one-way analysis of variance performed [illegible] all 3 groups and a t-test comparison of Groups 1C and 3C [illegible] no significant differences between the groups related to the [illegible] the Rathus Assertiveness Schedule (see Appendixes P and Q). Pearson correlation coeffients were computed for the paired mother-and-daughter responses in Group 1 and Group 3 with regard to mother-daughter sexual communication and scores on the Rathus Assertiveness Schedule, as well as individual mothers' and their daughters' responses on the Rathus Assertiveness Schedule (see Appendix R). In Group 1 a significant relationship was found between mothers' and their daughters' responses on the Rathus Assertiveness Schedule (see Table 18). There was also a significant relationship between the daughters' scores on the Rathus Assertiveness Schedule and the mothers' and daughters' responses on the Fox scale. In Group 3 also there was a significant relationship between mothers' and their daughters' responses on the Rathus Assertiveness Schedule. The results indicated a relationship between mothers' and their daughters' responses in Group 3 with regard to mother-daughter sexual communication and assertiveness, but gave no indication as to the positive or negative aspects of this communication. The results also indicated that there was a relationship between the mothers' and their daughters' responses for Groups 1 and 3 on the Rathus Assertiveness Schedule, indicating that

TABLE 18

PEARSON CORRELATION COEFFICIENTS

Significant correlations with regard to the Rathus Assertiveness Scale for Group 1 and Group 3

Group 1 (n=22)

	Comm1d	Comm2m	dRathus	mRathus
dRathus	.4330*	.4359*		
mRathus			.5018*	

Group 3 (n=31)

	dRathus	mRathus
dRathus		
mRathus	.5600*	

Comm2d : Communication responses Fox - daughters
Comm2m : Communication responses Fox - mothers
dRathus: Rathus Assertiveness Scale - daughters
mRathus: Rathus Assertiveness Scale - mothers

* Significance .05

there was a relationship between mothers' and daughters' assertiveness levels but with no indication as to the positive or negative level of that assertiveness.

Pearson correlation coefficients were calculated for the paired mother-and-daughter responses for Groups 1 and 3 to ascertain the relationship between sexual knowledge, mother-daughter sexual communication responses, and assertiveness (see Table 19). The only significant correlations were the paired mother-and-daughter responses for Group 3, indicating a relationship between the mothers' scores on the Foothills Sexual Knowledge Questionnaire and the total communication score on the Fox Sexual Communication Questionnaire for both daughters and mothers. This indicated a relationship between the mothers' sexual knowledge and mother-daughter sexual communication for Group 3, mothers and daughters who had not experienced an adolescent pregnancy.

Out of interest, responses related to communication between parents and their teenagers were also assessed for frequency and percentage distribution (see Appendix S). Over 75 percent of the girls in Groups 1, 2 and 3 indicated that they thought most parents found it difficult to talk to their teenagers about sexuality, and over 80 percent of the mothers agreed. Both mothers and daughters reported that they found it difficult to talk about contraception. A chi square comparison of Groups 1 and 3 as well as Groups 1C and 3C indicated no significant differences in the area of communication between parents and their

TABLE 19

PEARSON CORRELATION COEFFICIENTS

Significant correlations
with regard to sexual knowledge scores for Group 3

Group 3 (n=31)	Comm2d	Comm2m
fhd		
fhm	.5345*	.6946*

fhd: Foothills sexual knowledge - daughters
fhm: Foothills sexual knowledge - mothers
Comm2d: Communication responses Fox - daughters
Comm2m: Communication responses Fox - mothers

TABLE 20

PEARSON CORRELATION COEFFICIENTS

Significant correlations
with regard to parent-adolescent communication for Group 3

Group 3 (n=31)	Comm1d	Comm2m
Comm1d		
Comm1m	.5268*	
Comm2d	.4107*	
Comm2m		

Comm1d: Communication responses Foothills - daughters
Comm1m: Communication responses Foothills - mothers
Comm2d: Communication responses Fox - daughters
Comm2m: Communication responses Fox - mothers

* Significance .05

teenagers, all agreeing that it is difficult for parents and teenagers to discuss sexuality (see Appendixes L & M). Pearson correlation coefficients were computed for Group 3 paired mother-and-daughter responses related to communication, mother and daughter sexual communication, assertiveness, and sexual knowledge (see Table 20). Three significant relationships were identified: total communication responses with regard to parent-teenager communication of mothers and daughters, daughters' responses with regard to parent-teenager communication, and mother-daughter sexual communication. These responses indicated a relationship between parent-teenager communication and mother-daughter sexual communication for Group 3.

HONESTY

The variable measuring honesty in answering was also outlined in frequency and percentage distribution (see Table 21). In Group 1 both mothers and daughters responded that the questionnaire would be answered honestly 75 percent of the time by 91 percent of mothers and daughters. In Group 2, the daughters reported that the questionnaires would be answered honestly 75 percent of the time by all the mothers and daughters responding. In Group 3, the daughters reported that the questionnaires would be answered honestly 75 percent of the time by 80.6 percent of the respondents, whereas the mothers reported that the questionnaires would be answered honestly 75 percent of the time by 96.8 percent of the respondents. A chi square comparison of all daughters, Groups 1C and 3C indicated that the girls in Group 1C

TABLE 21

FREQUENCY AND PERCENTAGE DISTRIBUTION

Honesty in responding for Group 1, Group 2 and Group 3

To what extent do you think mothers or daughters are honest in answering this questionnaire?

	GROUP 1		GROUP 2	GROUP 3	
Time	Daughter	Mother	Daughter	Daughter	Mother
100%	(10) 45.5%	(10) 45.5%	(7) 58.3%	(4) 12.9%	(14) 45.2%
75%	(10) 45.5%	(10) 45.5%	(5) 41.7%	(21) 67.7%	(16) 51.6%
50%	(2) 9.1%	(2) 9.1%	0	(5) 16.1%	(1) 3.2%
25%	0	0	0	(1) 3.2%	0
0%	0	0	0	0	0
n	22	22	12	31	31

TABLE 22

CHI SQUARE

Comparison of honesty in responding for Group 1C and Group 3C

Variable	Chi-square	d.f.	Significance	Direction
honesty	11.21877	3	0.0106*	G1C>G3C

TABLE 23

t TEST

Comparison of honesty in responding for Group 1C and Group 3C

	Group 1C			Group 3C					
Variable	n	mean	s.d.	n	mean	s.d.	t	p	Direction
Honesty	34	3.4412	0.613	31	2.9032	0.651	3.43	0.001*	G1C>G3C

TABLE 24

ONEWAY ANALYSIS OF VARIANCE

Honesty of response for Group 1, Group 2 and Group 3

Variable		n	mean	s.d.	d.f.	f	p	Direction
Honesty	G1	22	3.3636	0.6580				
	G2	12	3.5833	0.5149	64	6.3554	0.0031*	G1&2>G3
	G3	31	2.9032	0.6509				

* Significance .05

reported that the respondents would be significantly more honest than did the girls in Group 3C (see Table 22). A t-test comparison of all daughters, Groups 1C and 3C also indicated that the girls in Group 1C reported that they thought mothers and daughters would be significantly more honest in answering the questionnaire than did the girls in Group 3C (see Table 23). A one-way analysis of variance between Groups 1, 2 and 3 indicated that Groups 1 and 2 predicted that mothers and daughters would be significantly more honest in answering the questionnaire than did Group 3 (see Table 24). Although Group 1 reported that the respondents would be significantly more honest than did the Group 3, the majority of all the repondents indicated that mothers and daughters would be honest in answering the questionnaires at least 75 percent of the time. The consistency of these responses provided some evidence for validity of the questionnaire as this concurred with the results of the study by Meikle and others (1981).

COMMENTS ON QUESTIONNAIRES

Several comments were made on the questionnaires that were returned. The question regarding the main sources of information about sexuality included space for the respondent to list other sources, which included films for two daughters in Group 3, as well as Planned Parenthood for a daughter in Group 1. One daughter in Group 2 added to the question about parents finding it difficult to talk to teenagers about sexuality stating: "It _is_ difficult for my friends and many others find it very difficult and find out through friends." Another daughter in Group 3 did not respond yes or no when asked if sex should be completely spontaneous but stated "It depends - does she want to get pregnant? Is she on the birth control pill?"

Comments were also made regarding mother-daughter communication. "I'm only afraid that I won't express myself well enough"; "It is difficult to answer as it is situational who initiated the discussion"; "We have a large family where many things are discussed openly as a group or in small groups" were comments made by mothers in Group 3. One stepmother in Group 3 added that the natural mother had assumed the responsibility for sexual communication. A mother in Group 3 stated that she realized while completing the questionnaire that there was a lack of communication on sexuality between her and her daughter, which she had previously thought of as very positive. A mother in Group 1 found it hard to answer the question of who initiated the discussion as these things came up in conversation.

One daughter in Group 1 stated that she was unable to answer the variables on mother-daughter communicaton as her daughter was only two years old but as sex, and similar matters were never discussed between her mother and her, she felt very confident and sure she would talk about it when her daughter was old enough to comprehend. This response indicated some confusion about who was the daughter for this respondent.

Two mothers indicated that the Rathus Assertiveness Schedule was difficult to complete, with one mother stating that it was difficult because of the two parts and the negative to positive responses, especially for her daughter. These comments also indicated difficulty in mother-daughter communicaton.

RESULTS OF HYPOTHESES TESTING

Question A: Is there a difference between Group 1 and Group 3 with regard to the daughter's risk for an adolescent pregnancy?

Hypothesis A1 was rejected because the daughters in Group 1 (and Group 2) were significantly older than the daughters in Group 3.

Hypothesis A2 was rejected because the mothers in Group 3 were significantly better educated than the mothers in Group 1. The daughters in Group 3 had reached a significantly higher level of education for their age than had the daughters in Group 1 (and Group 2).

Hypothesis A3 was accepted because no significant difference was found between Group 1 and Group 3 with regard to family composition.

Hypothesis A4 was accepted because there was no significant difference between Group 1 and Group 3 with regard to birth order.

Hypothesis A5 was rejected because the daughters in Group 1 (and Group 2) scored significantly higher on the measure of sexual knowledge than did the daughters in Group 3.

Hypothesis A6 was rejected because the daughters in Group 1 (and Group 2) began dating at a significantly younger age than the daughters in Group 3.

Hypothesis A7 was accepted because no significant difference was found between Group 1 and Group 3 with regard to sexual spontaneity, with most respondants indicating that sex should be spontaneous.

Hypothesis A8 was rejected because the daughters in Group 3 reported their mother to be their source of sexual and contraception information significantly more often, as well as listing significantly more other sources than did daughters in Group 1 (and Group 2).

Hypothesis A9 was accepted because no significant differences were found between Group 1 and Group 3 with regard to sex education classes in school.

Question B: Is there a difference between Group 1 and Group 3 with regard to agreement between mothers and their daughters concerning their communication about sexuality?

Hypothesis B1 was rejected because mothers and daughters in Group 3 reported significantly more agreement on the amount of sexual communication about menstruation, dating and boyfriends, sexual intercourse, conception, and contraception, than did mothers and daughters in Group 1.

Hypothesis B2 was rejected because mothers and daughters in Group 3 agreed significantly more on the timing (before or after the adolescent was involved in the sexual behavior) of sexual communication about menstruation, dating and boyfiends, sexual intercourse, conception, and contraception than did mothers and daughters in Group 1.

Hypothesis B3 was rejected because mothers and daughters in Group 3 reported significantly more agreement in regard to who had been the initiator of sexual communication about menstruation, dating and boyfriends, sexual intercourse, conception, and contraception, than did mothers and daughters in Group 1.

Hypothesis B4 was rejected because mothers and daughters in Group 1 agreed significantly more times that the reason for sexual communication was the result of a problem when discussing menstruation, sexual intercourse and conception, than did mothers and daughters in Group 3.

Hypothesis B5 was rejected in part because two of the six sexual topics resulted in different comfort levels. Mothers and daughters in Group 1 reported significantly more agreement on their own comfort in discussing menstruation and contraception than mothers and daughters in Group 3.

Hypothesis B6 was rejected in part because mothers and daughters in Group 3 reported significantly more agreement in the perceived comfort of the other discussing three of the six sexual topics, sexual intercourse, conception, and contraception than mothers and daughters in Group 1.

Hypothesis B7 was accepted because there was no significant difference between mothers and daughters in Group 1 and mothers and daughters in Group 3 with regard to assertiveness levels.

Question C: Is there a significant difference between Group 1 and Group 3 with regard to mother-daughter communication about sexuality?

Hypothesis C1 was rejected in part because the amount of discussion was significantly different for two of the six topics. Group 3 reported discussing dating and boyfriends and contraception significantly more than did Group 1 (and Group 2).

Hypothesis C2 was rejected in part because the timing of the discussion was significantly different for two of the six topics. Group 3 reported discussing menstruation and sexual intercourse before involvement in the sexual behavior significantly more often than did Group 1 (and Group 2).

Hypothesis C3 was accepted because there was no significant difference between Group 1 and Group 3 with regard to who had been the initiator of communication about sexuality.

Hypothesis C4 was rejected because Group 1 (and Group 2) reported sexual communication, including dating and boyfriends, sexual intercourse, conception, contraception, and morality, arising as the result of a problem significantly more than did Group 3.

Hypothesis C5 was rejected in part because the comfort levels were significantly different for three of the six topics. Group 3 reported significantly more comfort discussing dating and boyfriends, sexual intercourse, and contraception than did Group 1 (and Group 2).

Hypothesis C6 was rejected in part because the perceived comfort level of the mother or daughter was significantly different for three of the six topics. Group 3 reported a significantly higher level of their mother's or daughter's perceived comfort discussing sexual intercourse, conception, and morality than did Group 1 (and Group 2).

Hypothesis C7 was accepted because although there was a correlation between mothers' and their daughters' responses, there were no significant differences between Group 1 and Group 3 with regard to assertiveness levels, which included communication.

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

CONCLUSIONS

The focus of this study was to discover if there were patterns of mother-daughter communication about sexuality and to ascertain the differences between a group of mothers and daughters who had experienced a pregnancy (Group 1) and another group of mothers and daughters who had not experienced a pregnancy (Group 3). Questionnaires were administered to mothers and their daughters to assess (A) risk factors for an adolescent pregnancy including age, education, family composition, birth order, and sexual knowledge, as well as age at the onset of dating, sexual spontaneity, sources of sexual information, and sex education; (B) agreement between mothers' and their daughters' responses regarding their communication about sexuality including amount of discussion (number of times), timing (before or after the adolescent is involved in the behavior), the initiator of the discussion, reason (the result of a problem), and comfort levels discussing menstruation, dating and boyfriends, sexual intercourse, conception, contraception, and morality, as well as assertiveness levels; and (C) differences between the groups regarding mother-daughter communication patterns about sexuality including amount (number of times), timing (before or after the adolescent is involved in the behavior), initiator, reason (the result of a problem), personal and perceived mother or daughter comfort levels discussing sexual topics which included menstruation, dating and boyfriends, sexual intercourse, conception, contraception, and morality, as well as assertiveness levels.

RISK FACTORS FOR AN ADOLESCENT PREGNANCY

Risk factors including age, education, family composition (including personal concept of "mother"), birth order, sexual knowledge, as well as age of onset of dating, sexual spontaneity, sources of sexual information, and sex education classes were analyzed to ascertain their relationship to mother-daughter patterns of communication about sexuality and adolescent pregnancy.

The ages of the daughters in Group 1 (and Group 2) were significantly higher than the ages of the girls in Group 3 but there were no significant differences in the ages of the mothers in the two groups. This was considered to be an artifact of the sample. The girls who had been pregnant were predictably older as adolescent pregnancies increase with age because more girls become sexually active as they get older. This could have been prevented if the study had matched the girls who had been pregnant with older girls who had not been pregnant.

The level of education of the daughters in Group 3 was significantly higher than those in Group 1 (and Group 2). This result was linked to the fact that these girls were also older, but a cross tabulaton of age and educational level indicted that the education of the daughters who had experienced a pregnancy had been interrupted. It could be assumed, therefore, that the education of these girls was probably disrupted by the pregnancy rather than by lack of ability. The age and grade levels were appropriate for the group of girls who had not experienced a pregnancy. These results concur with research concluding that cognitive ability (Cobliner, 1981), school achievement, (Goldsmith, et al., 1979), and educational level (Kantner & Zelnik, 1973) are related to the risk of an adolescent pregnancy.

When the mothers' responses were divided in the two general categories of having achieved high school and/or nonuniversity postsecondary education, and having completed a university education, there was a significant difference between the two groups. Mothers in Group 3 reported a university educational level significantly more often than mothers in Group 1. For this sample, mothers with daughters who had not experienced an adolescent pregnancy were better educated than the mothers with daughters who had experienced a pregnancy. These results are in concurrece with earlier findings (Walters, McKendry & Walters, 1979), leading to the conclusion that the mother's level of education may be indirectly related to the risk of her daughter becoming pregnant. It could be speculated that this relationship has to do with expectations of the mother, communication skills, and/or sex education.

The majority of mothers and daughters in both groups indicated that family composition consisted of a mother, father, and children. In both groups there were discrepancies between the mother's and her daughter's concept of the family's composition with the mother reporting a father in the family more often than the daughter. Thus, a single parent, female headed household was not related to pregnancy in adolescence for these respondants. This finding is at variance with other research which indicates that broken homes(Phipps-Yonas, 1980) are related to the risk of an adolescent pregnancy. The mothers and daughters in both groups also agreed on their concept of "mother" with the vast majority indicating their natural mother as the person they considered "mother". The adolescent girls who had experienced a pregnancy in this study were not separated from their mothers significantly more than those who had not been pregnant. Once again, this finding contradicts other research which indicates that being estranged from one's parent (Peterson, et al., 1982) increases the risk for an adolescent pregnancy. This could possibly be the result of sampling bias.

Although slightly more mothers and daughters in Group 3 were the first born, there was no significant relationship between birth order, mother-daughter communication and adolescent pregnancy.

The responses of Group 1 (and Group 2) and Group 3 were also analyzed for significant differences in their sexual knowledge. The adolescent girls who had experienced a pregnancy scored significantly higher with regard to sexual knowledge than did the daughters in Group 3. The girls in Group 2 (residents of Woodside, an institution for unwed mothers) scored the highest of the groups, no doubt because of the additional sex education programming for these institutionalized girls as well as the fact that they were older. These results seem contrary to the research which had indicated that a lack of sexual knowledge increases the risk of becoming pregnant as an adolescent (Juhaz, 1974; Meikle, et al., 1980), but the girls who had experienced an adolescent pregnancy probably have added to their sexual knowledge after becoming pregnant.

The sexual knowledge of the mother as compared to that of her daughter did not indicate that the mother effectively transmitted sexual information to her daughter. When comparing total sexual knowledge score responses between mothers and their daughters, Group 1 did have higher scores than did Group 3 but these results were not significant. Paired mother-and-daughter responses revealed no significant differences between groups with regard to sexual knowledge. Few of the mothers in this study transmitted their sexual knowledge effectively to their daughters, as in both groups the sexual knowledge score of the mother was higher than that of her daughter. These results are consistent with previous research indicating the difficulty mothers have in communicating sexual knowledge to their daughters (Potter and Smith, 1976; Roosa, 1983).

Sexual communication between mothers and daughters in Group 3 was found to be generally more positive than that of mothers and daughters in Group 1 but the girls who had been pregnant had significantly higher sexual knowledge scores. Thus mother-daughter sexual communication did not appear to increase the sexual knowledge of the adolescent. More knowledgable mothers were not more effective communicators of sexual knowledge. This concurs with prior research which indicated that adolescents who have discussed sexuality with their mothers often remained ignorant, and/or have false ideas about sexuality and contraception (Dembo & Lundell, 1979). This leads to the conclusion that knowledge alone is not sufficient. Effective communication skills are also important in the transmission of sexual knowledge between mothers and daughters.

A relationship was also found between the mother's sexual knowledge and the mother-duaghter sexual communication responses in Group 3. These results indicated that there was a relationship between the mother's sexual knowledge and her sexual communication patterns with her daughter. Considering that these mothers and daughters had not experienced an adolescent pregnancy, this finding concurs with research indicating that when it is the mother who transmits sexual information, it is most likely to influence her daughter's sexual behavior (Spanier, 1975).

There was no relationship between the assertiveness levels of mothers or daughters and their levels of sexual knowledge. An increased ability to communicate assertively did not increase the ability to transmit sexual knowledge. These results concur with research which indicated that, generally, mothers are uncomfortable discussing sexuality with their daughters (Hite, 1976; Sorenson, 1972).

Although a variety of factors have been identified that place the adolescent girl at risk for a pregnancy, this study also focused on the factors of dating the opposite sex at an early age, sexual spontaneity, sources of sexual information and contraception, and sex education in the school system. The results of this study indicated that the girls who had experienced an adolescent pregnancy began dating at a significantly earlier age than did the daughters in Group 3. These results are consistent with prior research which indicated that adolescent girls who experience a pregnancy tend to begin dating at an earlier age (Davidson & Leslie, 1977). It is also interesting to note that almost half of the mothers whose daughters had experienced a pregnancy began dating themselves before the age of 13 as compared to one-quarter of the mothers in Group 3. These results add credence to research indicating that daughters tend to model attitudes, including sexual attitudes of their mothers (Shah & Zelnik, 1981). Thus the onset of dating at a young age is related to the risk of an adolescent pregnancy.

When asked if sexual behavior should be completely spontaneous, there were no significant differences between the responses of the groups. Over one-third of the daughters responded affirmatively, placing both groups at risk for an adolescent pregnancy. These results concur with prior research which indicated spontaneity as an adolescent pregnancy risk factor (Koenig & Zelnik, 1982). In response to this question, approximately one-third of the mothers in both groups also indicted that sexual behavior should be completely spontaneous. These results lend credence to prior research indicating that a mother's values and attitudes influence those of their daughters (Juhaz, 1974). Adoption of this attitude tends to lead to sexual activity without the use of contraception which also increases the risk of an adolescent pregnancy (Westin, 1980). Approximately three-quarters of the girls who had experienced a pregnancy indicated that they had not used contraception with their most recent experience of sexual intercourse, a factor which may have been related to them becoming pregnant. Thus, although there were no significant differences in this study, it could be concluded that the belief that sexual behavior should be spontaneous does increase the risk of a pregnancy in adolescence.

Sources of sexual and contraception information have also been related to the risk of an adolescent becoming pregnant. The results indicated that the daughters in Group 3 listed mother, friends, or classmates, and books, or pamphlets significantly more often as sources of sexual information than did the girls who had experienced a pregnancy. The daughters in Group 3 also listed friends, or classmates, doctors, counselors, teachers, and books and pamphlets significantly more often as sources of information about contraception than did the girls who had experienced a pregnancy. These results indicated that the daughters who had not experienced an adolescent pregnancy had significantly more sources of information about sexuality and contraception than did the girls in Group 1. These results concur with prior research which indicated that sexual information reduces the risk of an adolescent pregnancy (Juhaz, 1974).

The majority of the daughters who had not experienced a pregnancy indicated that their mother was their main source of information regarding sexuality. Although their mothers were listed as an important source of sexual information for Group 1, their responses also indicated that their main source of information was friends and classmates. These results concur with prior research which indicated that the mother has an important influence on her daughter's sexual standards (Cobliner, 1981) and that adolescents prefer sexual information from their mother (Zabin & Clark, 1981). This information also related to the risk of an adolescent pregnancy, in that the daughters who did not list their mother as a major source of information also reported that they did not use contraception in their last involvement with sexual activity and had experienced a pregnancy. This concurs with previous research which indicated that adolescents who were unable to obtain sexual information from their mother were less likely to use contraceptives (Hanson, Jones & Chernovetz, 1979). Thus, mother-daughter discussions of sexual information has both direct and indirect influences on the daughter's sexual behavior; if effective communication takes place, the risk of an adolescent pregnancy is reduced(Fox & Inazu, 1982).

Sex education has also been identified as a factor related to the risk of a pregnancy in adolescence (Goldfarb, et al, 1977; Juhasz, 1974). In this study sex education at school which included information on contraception was received by over three-quarters of the girls who had experienced a pregnancy and over half of the girls in Group 3. Although these numbers are not significantly different, it was a dramatic increase from the sexual education received by their mothers. Less than one-fifth of the mothers in Group 1 and just over one-tenth of the mothers in Group 3 reported that they had received sex education at school which included information on contraception. More of the girls who had been pregnant may have received sex education in school as they were also older and these classes are offered as options in higher grades.

Thus the assessment of risk factors for a pregnancy in adolescence indicated that the groups studied were similar with regard to family composition, including their perception of "mother", and birth order. The mothers in both groups were similiar with respect to age, but the daughters who had experienced a pregnancy were significantly older than those in Group 3. The daughters in Group 3 reported a more age appropriate level of education than did the girls who had experienced an adolescent pregnancy. The mothers in Group 3 reported a higher level of education. Girls who had experienced a pregnancy, especially those in a home for unwed mothers, scored higher on sexual knowledge than those in Group 3. Generally, the mothers in this study did not transmit their sexual knowledge effectively to their daughters. Sexual spontaneity and sex education responses were similar for both groups with a third of the adolescents indicating that they were at risk because of the attitude that sexual behavior should be spontaneous. The daughters reported more sex education classes at school than their mothers had experienced. The daughters who had experienced a pregnancy began dating at an earlier age and reported fewer sources of sexual information (and less often their mother as a source) than their counterparts in Group 3. These results are consistent with research reported in the related literature. Thus this study indicates that there are factors related to the risk for a pregnancy in adolescence which may be positively influenced by effective mother-daughter communication about sexuality.

AGREEMENT BETWEEN MOTHERS AND DAUGHTERS REGARDING THEIR COMMUNICATION ABOUT SEXUALITY

The results of the questionnaires were also analyzed to ascertain the agreement of mothers' and their daughters' responses for the two groups. There was significantly higher agreement (with no indication as to positive or negative aspects of this agreement) between mothers and daughters on more variables when the daughter had not experienced an adolescent pregnancy. The mothers and daughters in Group 3 agreed on the discussion of menstruation, dating and boyfriends, sexual intercourse, conception, and contraception. They also agreed as to whether menstruation, dating and boyfriends, sexual intercourse, conception, and contraception had been discussed before or after the event. Mothers and daughters in this group also agreed on who had initiated the discussions on menstruation, dating and boyfriends, sexual intercourse, conception, and contraception. They also agreed as to whether the discussion of menstruation was the result of a problem. Mothers and daughters in this group also agreed on the perceived level of comfort of the other in discussing sexual intercourse, conception, and contraception. Thus mothers and daughters who had not experienced a pregnancy in adolescence agreed more often on aspects of mother-daughter communication about sexuality, with no indication about the positive or negative focus of the discussion.

The daughters who had experienced an adolescent pregnancy and their mothers agreed as to the discussion of dating and boyfriends, and sexual intercourse as well as whether contraception had been discussed before or after the event. They also agreed as to whether the discussion of menstruation, sexual intercourse, and conception was the result of a problem. These mothers and daughters also agreed on their own comfort discussing menstruation and contraception. Paired mother-daughter responses for both groups indicated an agreement in mother and daughter responses related to assertiveness. Thus daughters who had experienced a pregnancy in adolescence and their mothers agreed more often on the aspects of mother-daughter communication about sexuality that are most likely to be negative.

These results did not indicate whether the sexual topics were discussed in a positive or negative manner but only in the agreement of the perception between the mother's and her daughter's responses regarding sexual communication patterns. There was significantly more agreement between daughters who had not experienced an adolescent pregnancy and their mothers on the sexual communication variables. This agreement in itself may indicate a more positive communication pattern between these mothers and daughters as compared to daughters who had experienced a pregnancy and their mothers. This concurs with research indicating the importance in mother-daughter sexual communication to reducing the risk of an adolescent pregnancy (Furstenberg, 1976; Zabin, 1981).

A comparison of this study with that of Fox and Inazu (1980) revealed that mothers and daughters in this study consistently reported less discussion of sexual variables than did the respondents in the Fox and Inazu study. It is important to note, however, that the Fox and Inazu sample did not address the issue of adolescent pregnancy. The authors concluded that 98 percent of mothers and 93 percent of daughters reported discussing menstruation, whereas in this study 94 percent of mothers and 74 percent of daughters reported discussing menstruation. In the Fox and Inazu study 97 percent of mothers and 90 percent of daughters reported having discussed dating and boyfriends as compared to 87 percent of mothers and 78 percent of daughters in this study. In the Fox and Inazu study 86 percent of mothers and 81 percent of daughters had discussed conception as compared to 74 percent of mothers and 63 percent of daughters in this study. 81 percent of mothers and 70 percent of daughters reported discussing sexual intercourse in the Fox and Inazu study as compared to 60 percent of mothers and 51 percent of daughters in this study. In the Fox and Inazu study 75 percent of mothers and 70 percent of daughters reported discussing contraception as compared to 66 percent of mothers and 51 percent of daughters in this study. Thus the focus on pregnancy in adolescence may have lowered the percentages in this study when compared to the Fox and Inazu study.

There was less consistency between mother and daughter responses in this study than in the Fox and Inazu study, although mothers did tend to report slightly more discussion of sexual topics than their daughters in both studies. In this study more mothers tended to initiate the discussion of sexual topics. In both studies mothers and daughters reported the least comfort and the most reluctance to discuss sexual intercourse, conception, and contraception. The consistently lower level of mother-daughter sexual communication in this study may be due in part to the specific inclusion of mothers with daughters who had experienced an adolescent pregnancy.

The results of this study indicated a significant relationship between all the mother's and their daughter's responses on assertiveness levels indicating that there was a similarity between the assertiveness levels of mothers and their daughters. These results concur with the research which indicated that assertive communication is modeled by the mother for her daughter (Baer, 1976; Calderone, 1980) and that the daughter learns assertive communication from identifying with her mother (Potter, 1980; Sorensen, 1973). There were no significant differences between the assertiveness levels of mothers and daughters in the two groups. There was also no relationship between the assertiveness level of mothers or daughters and their level of sexual knowledge. These results would seem to indicate that mothers were more effective in transmitting their assertive patterns to their daughters than in using assertive communication to transmit sexual knowledge to their daughters. These results bear out those of previous research which indicated that mothers have added difficulty communicating with their adolescent when the subject is sexuality (Yalom, Estler & Brewster, 1982).

Thus it may be concluded that daughters who had not experienced a pregnancy in adolescence and their mothers agree more often about sexual communication. Although daughters who had experienced a pregnancy in adolescence and their mothers agreed on some sexual communication, it was likely to be more negative, taking place after the sexual behavior had occurred and as the result of a conflict. This emphasizes the importance of positive, effective sexual communication between mother and daughter to reduce the risk of a pregnancy in adolescence. Assertiveness levels of the mother tend to be modeled by the daughter but this alone did not decrease the risk of a pregnancy in adolescence.

DIFFERENCES BETWEEN GROUPS WITH REGARD TO MOTHER-DAUGHTER COMMUNICATION ABOUT SEXUALITY AND ASSERTIVENESS LEVELS

When the responses of mothers and their daughters in Group 1 and Group 3, as well as the responses of the daughters in Group 1C and Group 3C were compared with regard to sexual communication patterns, the results indicated a more positive communication pattern for daughters who have not experienced an adolescent pregnancy and their mothers. Mothers and daughters in Group 3 reported feeling significantly closer than did mothers and daughters in Group 1. These results accord with those of other research which indicated that a lack of a close mother-daughter relationship (Cobliner, 1981; Inazu & Fox, 1980), as well as feeling and being rejected or unloved by her mother (Epstein, 1980; Phipps-Yonas, 1980), are factors which increase the risk of an adolescent becoming pregnant.

The results also indicated that mothers and daughters in Group 3 were more likely to have discussed dating and boyfriends, and contraception in the last six months, as well as to have discussed menstruation, and sexual intercourse before the sexual behavior on the part of the adolescent. These results are also in agreement with those of other research which has indicted that ineffective mother-daughter communication has been related to the risk of an adolescent girl becoming pregnant (Shah & Zelnik, 1981; Yalom, et al., 1982). Mothers and daughters in Group 1 were more likely to have discussed dating and boyfriends, sexual intercourse, conception, contraception, and morality as the result of a problem than were daughters who had not experienced a pregnancy and their mothers. These results are also similar to those of other research which indicates that mother-daughter sexual discussion is often the result of a conflict (Chess, et al., 1976; Fox & Inazu, 1980). Sexual discussion after the daughter has engaged in the sexual behavior and as the result of a conflict is negative and thus related to the risk of a pregnancy in adolescence.

Mothers and daughters in Group 3 reported more comfort in discussing dating and boyfriends, sexual intercourse, and contraception. They also reported a higher perception of their mother's or daughter's comfort level in discussing sexual intercourse, conception, and morality as compared to mothers and daughters in Group 1. These results are in agreement with those of other research which indicated that the mother must transmit an attitude of positive regard and acceptance to her daughter so that she will feel comfortable discussing sexual concerns and behaviors (Reiss & Miller, 1974). Research has also indicated that adolescents prefer to talk to their parents about sexuality but perceive discomfort on the part of their parents, indicating that adults model sexual communication comfort for their adolescent children(Fox & Inazu, 1982; Hass, 1979; Hite, 1976; Meikle, et al., 1980; Potter & Smith, 1976; Sorensen, 1973). Discomfort in such communication leads to the ineffective mother-daughter sexual communication which is related to the risk of an adolescent girl becoming pregnant (Poliner & Boekelheide, 1980).

Positive communication between parents and their teenage daughter has been found to reduce risk of an adolescent pregnancy (Hass, 1979; Robin, 1981). In this study no significant differences were found between the groups, with the vast majority of all mothers and daughters indicating that parents found it difficult to discuss sexuality and contraception with their teenagers. These results accord with other research (Roosa, 1983; Sorensen, 1973) which indicated the difficulties that parents experience communicating with their teenagers. Thus it may be concluded that positive mother-daughter sexual communication is a process which begins early in the daughter's life. Her mother's comfort with sexual communication is perceived by the daughter and influences their communication about sexual topics. Comfort and thus more effective mother-daughter communication about sexuality reduces the risk of a pregnancy in adolescence.

The results of this study have indicted that daughters who have not experienced an adolescent pregnancy (Group 3) tend to be younger, have a more appropriate education level for their age, possess less sexual knowledge, begin dating at a later age, and report the mother and several other sources of sexual and contraceptive information. They also have a more positive mother-daughter sexual communication pattern agreeing more often on the occurrence, the timing, the initiator, the reason, and the perceived mother's or daughter's level of comfort in discussing sexual topics. These mothers and daughters in Group 3 also have a closer mother-daughter relationship and engage in more discussion, more often before the event, less often as a result of a problem, with more personal comfort, as well as the perceived comfort of the other in discussing sexual topics which included sexual intercourse, conception, contraception, and morality when compared with daughters who had experienced an adolescent pregnancy and their mothers.

The results of this study did not indicate a significant difference in assertiveness levels which included assertive communication between the groups but the results did, however, indicate a relationship between the assertiveness level of mothers and their daughters. Although these results may not lead to the conclusion that assertive mother-daughter communication about sexuality will significantly reduce the possibility of an adolescent pregnancy, it does indicate that mother-daugher communication about sexuality is an important factor when assessing the risk of an adolescent pregnancy.

These results are in accord with those of research which indicated that mother-daughter sexual communication is related to the risk of an adolescent girl becoming pregnant (Bennett & Dickinson, 1980; Fox & Inazu, 1982; Zabin & Clark, 1981). As normal adolescent development equips an adolescent for physical, sexual intimacy but often leaves her without the communication and interpersonal skills necessary to regulate her social behavior with regard to sexuality (Juhasz & Schnieder, 1980), the mother-daughter relationship becomes an important transmission structure for sexual information and socialization (Fox, 1980; Hirsch, 1981). The direct and indirect transmission of the mother's sexual values, attitudes, and behavior to her daughter (Cobliner, 1981; Fox & Inazu, 1982) begins early in life. The transmission of these sexual values and behaviors is more positive if the mother is comfortable with sexual communication (Hass, 1979; Reiss & Miller, 1974). Unfortunately, adolescents do experience difficulty communicating with their mothers about sexuality (Harris, 1971; Inazu & Fox, 1980; Sorensen).

The results of this study, which indicated that daughters who have experienced an adolescent pregnancy and their mothers (Group 1) have more difficulty communicating about sexual topics than do daughters who have not experienced an adolescent pregnancy and their mothers (Group 3), tends to support this related research. This study lends credence to the conclusion by Inazu and Fox (1980) that the mother's impact on her daughter's sexual education and behavior is a subtle, unspoken process achieved through modeling and the transmission of attitudes. Most importantly, a positive mother-daughter relationship is based on respect with open, honest, and appropriate communication. This positive sexual communication with her mother enables the adolescent daughter to define her sexual behavior as being subject to planning and regulation, thus reducing the risk of an adolescent pregnancy (Needles, 1977).

IMPORTANCE

The emphasis of this study was the important and continuing social problem of adolescent pregnancies in our society. Statistics have shown that adolescent pregnancies, live births and abortions, are increasing despite the availability of contraceptives (Abel, et al., 1982; Forrest, Hermalin & Henshaw, 1981; Koenig & Zelnik, 1982; O'Connell & Moore, 1980; Phipps-Yonas, 1980; Zelnik, 1980). The current trend in school systems is toward a cautious and conservative approach to sex education (Greydanus, 1981; Kirby, 1980). This places even more responsibility on the parents who have the challenging task of providing positive sexual education and guidance for their children. This study provided additional information for the mother regarding communication about sexuality with her daughter, which was considered important because the mother is the preferred source of sexual knowledge for the young female. The results of this study also supported the development of agency programming to assist mothers and daughters to develop effective communication skills as related to sexual discussion in order to reduce some of the risk factors associated with the occurrence of adolescent pregnancies.

RECOMMENDATIONS

The results of this study, which concur with other research on adolescent pregnancy, indicate that mother-daughter communication about sexuality is one factor in the risk for a pregnancy in adolescence and should be the focus of more extensive research. This further research should include studies which would lead to a more comprehensive understanding of the underlying motivation and unique problems in mother-daughter sexual communication. Further research should also focus on the comparison of paired daughters who have, or have not, experienced an adolescent pregnancy and their mothers with regard to other identified risk factors. Assertive and other positive patterns of effective communication between mothers and daughters and their possible relationship to the risk of an adolescent pregnancy should also be investigated further.

After an extensive literature review, Phipps-Yonas (1980) concluded that there was no single profile of the pregnant adolescent, but that circumstances and choices made by the adolescent influenced the risk factor of the pregnancy. This, in addition to other research (McKendry, et al., 1979) which has indicated that efforts to reduce adolescent pregnancies must be directed to all adolescents considering the difficulties in identifying those at risk, leads to the conclusion that agency programs which would serve as an external stimulant to increase effective mother-daughter sexual communication should be initiated. These programs should provide a common basis for the communication process and ensure that mother-daughter sexual communication includes the discussion of conception and contraception. Mothers need an opportunity to enhance their communication skills as well as their sexual knowledge in groups and courses designed specifically to achieve these goals. Such courses should also concentrate on increasing the comfort level of both the mother and daughter in discussing sexual topics. Because this is a process begun in infancy these programs should begin early in the life of the daughter and change focus as she develops into a young woman. Although mother-daughter communication is of prime importance this programming should provide opportunities for the entire family, including fathers to take part when appropriate.

Considering that efforts to reduce the risk of an adolescent pregnancy should be directed to all adolescents, attempts at public education directed at both adolescents and their mothers should be encouraged in such media as television, print, and in educational facilities. Schools should continue to encourage parental participation in sex education courses beginning at an early grade. Sex educational programs in schools should also focus on mother-daughter communication with the recognition that mothers tend to be the primary source of information as well as a model for the transmission of sexual attitudes and values.

The results of this study have confirmed the importance of sexual discussion between mother and daughter as found in other research (Fox, 1978, 1979, 1980; Fox an Inazu, 1980, 1982; Greydanus, 1981; Herold & Goodwin, 1981; Inazu and Fox, 1980; Rosenstock, 1980; Shah & Zelnik, 1981; Yalom, et al., 1982). Because daughters who had not experienced an adolescent pregnancy and their mothers (Group 3) exhibited a more positive communication pattern than daughters who had experienced an adolescent pregnancy and their mothers (Group 1), any effort made by agencies, schools, churches, or other institutions to increase the level of positive mother-daughter sexual communication may contribute to lowering the risk of pregnancy in adolescence.

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APPENDIX A

MODIFIED FOX SEXUAL COMMUNICATION QUESTIONNAIRE

Please answer each of the following questions as best you can by placing an 'x' in the appropriate space. ALL YOUR ANSWERS ARE STRICTLY CONFIDENTIAL AND ANONYMOUS.

I am the mother ____
I am the daughter ____

1. My age is ____

2. Daughter is first born ____ OR Mother is first born ____
second born ____ second born ____
or ____ born or ____ born.

3. Family composition:
mother, father and child/children ____
mother only and child/children ____
mother, stepfather and child/children ____
stepmother, father and child/children ____

4. In your case 'mother' means:
natural mother ____
foster mother ____
grandmother ____
other female relative ____

5. Parental (mothers) level of education:

less than grade 5 ____
grades 9-10 ____
post secondary, nonuniversity ____
university degree ____

6. Daughter's level of education:

less than grade 5 ____
grade 6 ____
grade 7 ____
grade 8 ____
grade 9 ____
grade 10 ____
grade 11 ____
grade 12 ____
special class ____
vocational class ____
other (please explain) ________________________________
____

7. How close do you feel to your mother/your daughter?

Very close ____ Close ____ Not close at all ____

8. Have you (mother and daughter) ever discussed the following:

	yes	no
a) menstruation	___	___
b) dating and boyfriends	___	___
c) sexual intercourse (going all the way)	___	___
d) conception (how babies are made)	___	___
e) birth control	___	___
f) morality	___	___

9. Have you (mother and daughter) discussed the following in the last SIX months:

	yes	no
a) menstruation	___	___
b) dating and boyfriends	___	___
c) sexual intercourse (going all the way)	___	___
d) conception (how babies are made)	___	___
e) birth control	___	___
f) morality	___	___

10. Were the following topics discussed before or after the event or behavior:

	before	after	not discussed
a) menstruation	___	___	___
b) dating and boyfriends	___	___	___
c) sexual intercourse (going all the way)	___	___	___
d) conception (how babies are made)	___	___	___
e) birth control	___	___	___
f) morality	___	___	___

11. Who (mother or daughter) initiated (started) the discussion of the following:

	mother	daughter	not discussed
a) menstruation	___	___	___
b) dating and boyfriends	___	___	___
c) sexual intercourse (going all the way)	___	___	___
d) conception (how babies are made)	___	___	___
e) birth control	___	___	___
f) morality	___	___	___

12. Was the discussion of the following the result of a problem:

	yes	no
a) menstruation	____	____
b) dating and boyfriends	____	____
c) sexual intercourse (going all the way)	____	____
d) conception (how babies are made)	____	____
e) birth control	____	____
f) morality	____	____

13. How comfortable are you discussing the following with your mother/daughter?

	Very Comfortable	Comfortable	Not Very Comfortable
a) menstruation	____	____	____
b) dating and boyfriends	____	____	____
c) sexual intercourse (going all the way)	____	____	____
d) conception (how babies are made)	____	____	____
e) birth control	____	____	____
f) morality	____	____	____

14. How comfortable do you think that your mother/daughter is discussing the following:

	Very Comfortable	Comfortable	Not Very Comfortable
a) menstruation	____	____	____
b) dating and boyfriends	____	____	____
c) sexual intercourse (going all the way)	____	____	____
d) conception (how babies are made)	____	____	____
e) birth control	____	____	____
f) morality	____	____	____

APPENDIX B

MODIFIED FOOTHILLS SEXUAL KNOWLEDGE QUESTIONNAIRE - MOTHER

Please answer each of the following questions as best you can by placing an 'x' in the appropriate space. ALL YOUR ANSWERS ARE STRICTLY CONFIDENTIAL AND ANONYMOUS.

1. Is a girl physically capable of becomong pregnant before her first menstrual (monthly) period?

   Yes
   No
   I don't know

2. Condoms (rubbers or safes) usually give protection from venereal disease.
   Yes
   No
   I don't know

3. Can a girl become pregnant during her menstrual (monthly) period?

   Yes
   No
   I don't know

4. Do you need a prescription from a doctor for the birth control pill?

   Yes
   No
   I don't know

5. Is a girl most likely to get pregnant the day after her menstrual (monthly) period?

   Yes
   No
   I don't know

6. Can sperm live in the girl's reproductive system for three days?

   Yes
   No
   I don't know

7. Can a girl become pregnant without full intercourse taking place (going all the way)?

   Yes
   No
   I don't know

8. Does a woman have to have an orgasm (climax) before she can get pregnant?

Yes
No
I don't know

9. Is there any age when a boy is old enough to have intercourse (go all the way) and not risk making a girl pregnant?

Yes
No
I don't know

10. Do birth control pills only need to be taken after intercourse (going all the way)?

Yes
No
I don't know

11. Are there periods in the month when a boy is not fertile?

Yes
No
I don't know

12. For greatest protection it is necessary to wear the condom throughout sexual intercourse.

Yes
No
I don't know

13. Does a boy have a daily limit of sperm, which can be used up with the result that he can not get a girl pregnant thereafter?

Yes
No
I don't know

14. Should vaginal foam, cream or jelly be inserted just after each intercourse?

Yes
No
I don't know

15. Do you need a prescription from a doctor for vaginal foam or cream?

Yes
No
I don't know

16. Is a pregnancy generally more damaging to the physical health of a younger girl?

Yes
No
I don't know

17. At what age did you begin to date the opposite sex?

Before the age of 11
Between 11 and 13
Between 14 and 16
Between 17 and 19
Not yet

18. Should sex be completely spontaneous (unplanned)?

Yes
No

19. Who or what were the main sources of your information regarding sexuality? (check more than one)

Father
Mother
Brother
Sister
Other Relatives
Friends and Classmates
Doctor, Counsellor, Teacher
Books or Pamphlets
Other sources (please explain)

Have no knowledge of birth control

20. Who or what were the main sources of your information regarding birth control? (check more than one)

Father
Mother
Brother
Sister
Other Relatives
Friends and Classmates
Doctor, Counsellor, Teacher
Books or Pamphlets
Other sources (please explain)

Have no knowledge of birth control

21. I think most parents find it easy to talk to their teenagers about sexuality.

    Yes
    No

22. I think most parents find it easy to talk to their teenagers about birth control.

    Yes
    No

23. Did you ever have intercourse before marriage?

    Yes
    No

    If yes:
    (a) Did you discuss birth control with your mother before your first experience with intercourse (going all the way)?

    Yes
    No

    (b) Did you discuss birth control with your mother after your first experience with intercourse?

    Yes
    No

24. Have you received sex education at school, which included information on birth control?

    Yes
    No

25. To what extent do you think mothers will be honest in answering this questionnaire?

    Honest 100% of the time
    Honest 75% of the time
    Honest 50% of the time
    Honest 25% of the time
    Not honest at all

APPENDIX C

MODIFIED FOOTHILLS SEXUAL KNOWLEDGE QUESTIONNAIRE - DAUGHTER

Please answer each of the following questions as best you can by placing an 'x' in the appropriate space. ALL YOUR ANSWERS ARE STRICTLY CONFIDENTIAL AND ANONYMOUS.

1. Is a girl physically capable of becomong pregnant before her first menstrual (monthly) period?

   Yes
   No
   I don't know

2. Condoms (rubbers or safes) usually give protection from venereal disease.

   Yes
   No
   I don't know

3. Can a girl become pregnant during her menstrual (monthly) period?

   Yes
   No
   I don't know

4. Do you need a prescription from a doctor for the birth control pill?

   Yes
   No
   I don't know

5. Is a girl most likely to get pregnant the day after her menstrual (monthly) period?

   Yes
   No
   I don't know

6. Can sperm live in the girl's reproductive system for three days?

   Yes
   No
   I don't know

7. Can a girl become pregnant without full intercourse taking place (going all the way)?

   Yes
   No
   I don't know

8. Does a woman have to have an orgasm (climax) before she can get pregnant?

   Yes
   No
   I don't know

9. Is there any age when a boy is old enough to have intercourse (go all the way) and not risk making a girl pregnant?

   Yes
   No
   I don't know

10. Do birth control pills only need to be taken after intercourse (going all the way)?

    Yes
    No
    I don't know

11. Are there periods in the month when a boy is not fertile?

    Yes
    No
    I don't know

12. For greatest protection it is necessary to wear the condom throughout sexual intercourse.

    Yes
    No
    I don't know

13. Does a boy have a daily limit of sperm, which can be used up with the result that he can not get a girl pregnant thereafter?

    Yes
    No
    I don't know

14. Should vaginal foam, cream or jelly be inserted just after each intercourse?

    Yes
    No
    I don't know

15. Do you need a prescription from a doctor for vaginal foam or cream?

    Yes
    No
    I don't know

16. Is a pregnancy generally more damaging to the physical health of a younger girl?

Yes
No
I don't know

17. At what age did you begin to date the opposite sex?

Before the age of 11
Between 11 and 13
Between 14 and 16
Between 17 and 19
Not yet

18. Should sex be completely spontaneous (unplanned)?

Yes
No

19. Who or what were the main sources of your information regarding sexuality? (check more than one)

Father
Mother
Brother
Sister
Other Relatives
Friends and Classmates
Doctor, Counsellor, Teacher
Books or Pamphlets
Other sources (please explain)

Have no knowledge of birth control

20. Who or what were the main sources of your information regarding birth control? (check more than one)

Father
Mother
Brother
Sister
Other Relatives
Friends and Classmates
Doctor, Counsellor, Teacher
Books or Pamphlets
Other sources (please explain)

Have no knowledge of birth control

21. I think most parents find it easy to talk to their teenagers about sexuality.

    Yes
    No

22. I think most parents find it easy to talk to their teenagers about birth control.

    Yes
    No

23. Have you ever had intercourse (gone all the way)?

    Yes
    No

If yes:

(a) Did you discuss birth control with your mother before your first experience with intercourse (going all the way)?

Yes
No

(b) Did you discuss birth control with your mother after your first experience with intercourse?

Yes
No

(c) Did you use birth control for your most recent experience with intercourse?

Yes
No

(d) Have you ever been pregnant?

Yes
No

24. Have you received sex education at school, which included information on birth control?

    Yes
    No

25. To what extent do you think teenagers will be honest in answering this questionnaire?

Honest 100% of the time
Honest 75% of the time
Honest 50% of the time
Honest 25% of the time
Not honest at all

APPENDIX D

MODIFIED RATHUS ASSERTIVENESS SCHEDULE - DAUGHTERS

DIRECTIONS: Indicate how characteristic or descriptive each of the following statements is of you by using the code given below:

+3 very characteristic of me, extremely descriptive
+2 rather characteristic of me, quite descriptive
+1 somewhat characteristic of me, slightly descriptive
-1 somewhat characteristic of me, slightly nondescriptive
-2 rather uncharacteristic of me, nondescriptive
-3 very uncharacteristic of me, extremely nondescriptive

___ 1. Most people seem to be more aggressive and assertive than I am.
___ 2. I have hesitated to talk to students of the opposite sex outside of class because of "shyness".
___ 3. When the food served at a restaurant or Drive-In is not the way I want it, I complain about it to the waiter or waitress.
___ 4. I am careful to avoid hurting other people's feelings, even when I feel that I have been hurt.
___ 5. If a salesman has gone to considerable trouble to show me something which is not what I want, I have a difficult time in saying "No".
___ 6. When I am asked to do something, I insist upon knowing why.
___ 7. There are times when I look for a good strong argument.
___ 8. I work to get ahead as well as most students in my position.
___ 9. To be honest, people often take advantage of me.
___ 10. I enjoy starting conversations with new people and strangers.
___ 11. I often don't know what to say to good looking persons of the opposite sex.
___ 12. I will hesitate to make phone calls to places of business.
___ 13. I would rather apply for a job by writing letters than by going through with personal interwiews.
___ 14. I find it embarrassing to return something I bought.
___ 15. If a close and respected relative were annoying me, I would hide my feelings rather than express my annoyance.
___ 16. I have avoided asking questions for fear of sounding stupid.
___ 17. During an argument I am sometimes afraid that I will get so upset that I will shake all over.
___ 18. If a well known person makes a statement which I think is incorrect, I will have the others hear my point of wiew as well.
___ 19. I avoid arguing over prices with clerks and salesmen.
___ 20. When I have done something important or worthwhile, I manage to let others know about it.
___ 21. I am open and honest about my feelings.
___ 22. If someone has been spreading false and bad stories about me, I see him (her) as soon as possible to "have a talk" about it.
___ 23. I often have a hard time saying "No".
___ 24. I tend to bottle up my emotions rather than make a scene.
___ 25. I complain about poor service in a restaurant and elsewhere.
___ 26. When I am given a compliment, I sometimes just don't know what to say.
___ 27. If some people near me in a theatre were talking rather loudly, I would ask them to be quiet or to go some other place and sit.
___ 28. Anyone attempting to push ahead of me in a line is in for a good fight.
___ 29. I am quick to express an opinion.
___ 30. There are times when I just cant't say anything.

APPENDIX E

RATHUS ASSERTIVENESS SCHEDULE - MOTHERS

DIRECTIONS: Indicate how characteristic or descriptive each of the following statements is of you by using the code given below:

+3 very characteristic of me, extremely descriptive
+2 rather characteristic of me, quite descriptive
+1 somewhat characteristic of me, slightly descriptive
-1 somewhat characteristic of me, slightly nondescriptive
-2 rather uncharacteristic of me, nondescriptive
-3 very uncharacteristic of me, extremely nondescriptive

___ 1. Most people seem to be more aggressive and assertive than I am.
___ 2. I have hesitated to make or accept dates because of shyness.
___ 3. When the food served at an restaurant is not done to my satisfaction, I complain about it to the waiter or waitress.
___ 4. I am careful to avoid hurting other people's feelings, even when I feel that I have been injured.
___ 5. If a salesman has gone to considerable trouble to show me merchandise which is not quite suitable, I have a difficult time in saying "No".
___ 6. When I am asked to do something, I insist upon knowing why.
___ 7. There are times when I look for a good vigorous arguement.
___ 8. I strive to get ahead as well as most people in my position.
___ 9. To be honest, people take advantage of me.
___ 10. I enjoy starting conversations with new acquaintances and strangers.
___ 11. I often don't know what to say to attractive persons of the opposite sex.
___ 12. I will hesitate to make phone calls to business establishments and institutions.
___ 13. I would rather apply for a job or for admission to a college by writing letters than by going through with personal interviews.
___ 14. I find it embarrassing to return merchandise.
___ 15. If a close and respected relative were annoying me, I would smother my feelings rather than express my annoyance.
___ 16. I have avoided asking questions for fear of sounding stupid.
___ 17. During an argument I am sometimes afraid that I will get so upset that I will shake all over.
___ 18. If a famed and respected lecturer makes a statement which I think is incorrect, I will have the audience hear my point of view as well.
___ 19. I avoid arguing over prices with clerks and salesmen.
___ 20. When I have done something important or worthwhile, I manage to let others know about it.
___ 21. I am open and frank about my feelings.
___ 22. If someone has been spreading false and bad stories about me, I see him (her) as soon as possible to "have a talk" about it.
___ 23. I often have a hard time saying "No".
___ 24. I tend to bottle up my emotions rather than make a scene.
___ 25. I complain about poor service in a restaurant and elsewhere.
___ 26. When I am given a compliment, I sometimes just don't know what to say.
___ 27. If a couple near me in a theatre or at a lecture were conversing rather loudly, I would ask them to be quiet or to take their conversation elsewhere.
___ 28. Anyone attempting to push ahead of me in a line is in for a good battle.
___ 29. I am quick to express an opinion.
___ 30. There are times when I can't say anything.

APPENDIX F

FREQUENCY AND PERCENTAGE DISTRIBUTION OF RESPONSES ON THE FOOTHILLS SEXUAL KNOWLEDGE QUESTIONNAIRE FOR GROUP 1, GROUP 2 AND GROUP 3

Group 1

Daughter			Mother		
Value	Frequency	Percent	Value	Frequency	Percent
1.00	1	4.5	6.00	1	4.5
3.00	1	4.5	7.00	1	4,5
5.00	1	4.5	8.00	1	4.5
8.00	1	4.5	9.00	1	4.5
9.00	2	9.1	10.00	3	13.6
10.00	1	4.5	11.00	4	18.2
11.00	4	18.2	12.00	3	13.6
12.00	6	27.3	13.00	7	31.8
13.00	3	13.6	14.00	1	4.5
14.00	2	9.1			
	22	100.0		22	100.0

mean 10.364
std. dev. 3.416

mean 11.136
std. dev. 2.145

Group 2

Daughter		
Value	Frequency	Percent
9.00	1	8.3
10.00	4	33.3
11.00	3	25.0
12.00	1	8.3
13.00	3	25.0
	12	100.0

mean 11.083
std. dev. 1.379

Group 3

Daughter			Mother		
Value	Frequency	Percent	Value	Frequency	Percent
3.00	3	9.7	7.00	4	12.9
4.00	2	6.5	8.00	2	6.5
5.00	4	12.9	9.00	1	3.2
6.00	1	3.2	10.00	4	12.9
7.00	1	3.2	11.00	4	12.9
8.00	4	12.9	12.00	8	25.8
9.00	2	6.5	13.00	4	12.9
10.00	3	9.7	14.00	4	12.9
11.00	2	6.5			
12.00	4	12.9			
13.00	2	6.5			
14.00	3	9.7			
	31	100.0		31	100.0

mean 8.645
std. dev. 3.601

mean 11.000
std. dev. 2.236

APPENDIX G

FREQUENCY AND PERCENTAGE DISTRIBUTION OF OTHER RISK FACTORS FOR AN ADOLESCENT PREGNANCY FOR GROUP 1, GROUP 2 AND GROUP 3

At what age did you begin to date the opposite sex?

	GROUP 1		GROUP 2	GROUP 3	
	Daughter	Mother	Daughter	Daughter	Mother
Before age 11	(2) 9.1%	(3) 13.6%	(1) 8.3%	(2) 6.5	(1) 3.2%
Between ages 11 & 13	(9) 40.9%	(7) 31.8%	(7) 58.3%	(8) 25.8%	(7) 22.6%
Between ages 14 & 16	(11) 50.0%	(12) 54.5%	(4) 33.3%	(9) 29.0%	(16) 51.6%
Between ages 17 & 19	0	0	0	(2) 6.5%	(7) 22.6%
Not yet	0	0	0	(10) 32.3%	0
n	22	22	12	31	31

Should sex be completely spontaneous?

	GROUP 1		GROUP 2	GROUP 3	
	Daughter	Mother	Daughter	Daughter	Mother
yes	(5) 22.7%	(8) 36.4%	(5) 41.7%	(11) 35.5%	(11) 35.5%
no	(17) 77.3%	(13) 59.1%	(7) 58.3%	(19) 61.3%	(20) 64.5%
no answer	0	(1) 4.5%	0	(1) 3.2%	0
n	22	22	12	31	31

Did you use birth control for your most recent experience with intercourse?

	GROUP 1		GROUP 2	GROUP 3	
	Daughter	Mother	Daughter	Daughter	Mother
yes	(8) 36.4%	0	(2) 16.7%	(3) 9.7%	0
no	(14) 63.6%	(1) 4.5%	(10) 83.3%	(1) 3.2%	(1) 3.2%
no answer	0	(21) 95.5%	0	(27) 87.1%	(30) 96.8%
n	22	22	12	31	31

Have you received sex education at school which included information on birth control?

	GROUP 1		GROUP 2	GROUP 3	
	Daughter	Mother	Daughter	Daughter	Mother
yes	(16) 72.3%	(4) 18.2%	(10) 83.3%	(18) 58.1%	(4) 12.9%
no	(6) 27.3%	(17) 77.3%	(2) 16.7%	(13) 41.9%	(26) 83.9%
no answer					(1) 3.2%
n	22	22	12	31	31

APPENDIX H

FREQUENCY AND PERCENTAGE DISTRIBUTION OF SOURCES OF SEXUAL INFORMATION FOR GROUP 1, GROUP 2 AND GROUP 3

Who or what were the main sources of your information regarding sexuality?

	GROUP 1		GROUP 2	GROUP 3	
	Daughter	Mother	Daughter	Daughter	Mother
Father	(1) 4.5%	0	(1) 8.3%	(3) 9.7%	(3) 9.7%
Mother	(12) 54.5%	(7) 31.8%	(6) 50.0%	(27) 87.1%	(13) 41.9%
Brother	(1) 4.5%	(1) 4.5%	0	(3) 9.7%	(1) 3.2%
Sister	(3) 9.1%	(13) 13.6%	(5) 41.7%	(15) 16.1%	(9) 29.0%
Other Relatives	(2) 9.1%	(3) 13.6%	(1) 8.3%	(1) 3.2%	(2) 6.5%
Friends & Classmates	(14) 63.6%	(12) 54.5%	(10) 83.3%	(22) 71.0%	(19) 61.3%
Dr, Teacher, Counselor	(11) 50.0%	(7) 31.8%	(7) 58.3%	(18) 58.1%	(10) 32.3%
Books or Pamphlets	(10) 45.5%	(12) 54.5%	(6) 50.0%	(19) 61.3%	(23) 74.2%
Other Sources	0	0	(2) 16.7%	(2) 6.5%	(4) 12.9%
No knowledge of Birth Control	(2) 9.1%	(1) 4.5%	0	(2) 6.5%	(1) 3.2%
n	22	22	12	31	31

Who or what were your main sources of your information regarding birth control?

	GROUP 1		GROUP 2	GROUP 3	
	Daughter	Mother	Daughter	Daughter	Mother
Father	0	0	(1) 8.3%	(2) 6.5%	(1) 3.2%
Mother	(11) 50.0%	(4) 18.2%	(5) 41.7%	(19) 61.3%	(8) 25.8%
Brother	0	0	0	(1) 3.2%	0
Sister	(6) 27.3%	(1) 4.5%	(3) 25.0%	(5) 16.1%	(4) 16.9%
Other Relatives	(1) 4.5%	(2) 9.1%	(1) 8.3%	(2) 6.5%	0
Friends & Classmates	(13) 59.1%	(4) 18.2%	(8) 66.7%	(16) 51.6%	(12) 38.7%
Dr, Teacher, Counselor	(11) 50.0%	(14) 63.6%	(7) 58.3%	(12) 38.7%	(21) 67.7%
Books or Pamphlets	(12) 54.5%	(9) 40.9%	(7) 58.3%	(16) 51.6%	(22) 71.0%
Other Sources	0	0	(1) 8.3%	(1) 3.2%	(2) 6.5%
No knowledge of Birth Control	(1) 4.5%	(2) 9.1%	0	(6) 19.4%	0
n	22	22	12	31	31

APPENDIX I

FREQUENCY AND PERCENTAGE DISTRIBUTION OF RESPONSE AGREEMENT BETWEEN MOTHERS AND THEIR DAUGHTERS FOR GROUP 1 AND GROUP 3

	Group 1 (n=22)				Group 3 (n=31)			
	both very close	both close	both not close at all	disagree	both very close	both close	both not close at all	disagree
How close do you feel to your mother or daughter	(1) 4.5%	(6) 27.3%	(7) 31.8%	(8) 36.4%	(16) 51.6%	(5) 16.1%	0	(10) 32.3%

	Group 1 (n=22)				Group 3 (n=31)			
	both yes	both no		disagree	both yes	both no		disagree
Have you ever discussed the following:								
menstruation	(16) 72.7%	(1) 4.5%		(5) 22.7%	(25) 80.6%	(2) 6.5%		(4) 12.9%
dating and boyfriends	(14) 63.6%	(5) 22.7%		(3) 13.6%	(27) 87.1%	(2) 6.5%		(2) 6.5%
sexual intercourse	(9) 40.9%	(6) 27.3%		(7) 31.8%	(17) 54.8%	(9) 29.0%		(5) 16.1%
conception	(12) 54.5%	(4) 18.2%		(6) 27.3%	(18) 58.1%	(6) 19.4%		(7) 22.6%
birth control	(10) 45.5%	(6) 27.3%		(6) 27.3%	(14) 46.7%	(9) 30.0%		(7) 23.3%
morality	(11) 50.0%	(2) 9.1%		(9) 40.9%	(21) 67.7%	(1) 3.2%		(9) 29.0%

	Group 1 (n=22)				Group 3 (n=31)			
	both yes	both no		disagree	both yes	both no		disagree
Have you discussed following in the last six months:								
menstruation	(9) 40.9%	(5) 22.7%		(8) 36.4%	(16) 51.6%	(8) 25.6%		(7) 22.6%
dating and boyfriends	(12) 54.5%	(3) 13.6%		(7) 31.8%	(23) 74.2%	(3) 9.7%		(5) 16.1%
sexual intercourse	(7) 31.8%	(5) 22.7%		(10) 45.5%	(10) 32.3%	(17) 54.8%		(4) 12.9%
conception	(5) 22.7%	(8) 36.4%		(9) 40.9%	(6) 19.4%	(20) 64.5%		(5) 16.1%
birth control	(12) 54.5%	(3) 13.6%		(7) 31.8%	(7) 22.6%	(17) 54.8%		(7) 22.6%
morality	(10) 45.5%	(3) 13.6%		(9) 40.9%	(15) 48.4%	(4) 12.9%		(12) 38.7%

	Group 1 (n=22)				Group 3 (n=31)			
	both before	both after	both not discussed	disagree	both before	both after	both not discussed	disagree
Were the following discussed before or after the event or behavior:								
menstruation	(10) 45.5%	(1) 4.5%	(1) 4.5%	(10) 45.5%	(23) 74.2%	0	(1) 3.2%	(7) 22.6%
dating and boyfriends	(5) 22.7%	(2) 9.1%	0	(15) 68.2%	(18) 58.1%	(7) 22.6%	(2) 6.5%	(4) 12.9%
sexual intercourse	(5) 22.7%	(2) 9.1%	(4) 18.2%	(11) 50.0%	(17) 54.8%	0	(8) 25.8%	(6) 19.4%
conception	(8) 36.4%	0	(6) 27.3%	(8) 36.4%	(17) 54.8%	0	(7) 22.6%	(7) 22.6%
birth control	(5) 22.7%	(1) 4.5%	(6) 27.3%	(10) 45.5%	(13) 41.9%	0	(11) 36.7%	(7) 22.6%
morality	(7) 31.8%	0	(3) 13.6%	(11) 50.0%	(17) 54.8%	(1) 3.2%	(1) 3.2%	(12) 38.7%

	Group 1 (n=22)				Group 3 (n=31)			
	both mother	both daughter	both not discussed	disagree	both mother	both daughter	both not discussed	disagree
Who initiated the discussion of the following:								
menstruation	(10) 45.5%	0	(2) 9.1%	(10) 45.5%	(15) 50.0%	(5) 16.7%	(1) 3.3%	(9) 30.0%
dating and boyfriends	(6) 28.6%	(2) 9.5%	(1) 4.8%	(12) 57.1%	(7) 23.3%	(13) 43.3%	(2) 6.7%	(8) 26.7%
sexual intercourse	(4) 18.2%	(1) 4.5%	(4) 18.2%	(13) 59.1%	(10) 33.3%	(3) 10.0%	(9) 30.0%	(8) 26.7%
conception	(8) 38.1%	0	(6) 28.6%	(7) 33.3%	(9) 31.0%	(5) 17.2%	(7) 24.1%	(8) 27.6%
birth control	(5) 23.8%	(2) 9.5%	(3) 14.3%	(11) 52.4%	(8) 26.7%	(1) 3.3%	(10) 33.3%	(11) 36.7%
morality	(11) 52.4%	0	(2) 9.5%	(8) 38.1%	(15) 50.0%	(1) 3.3%	(1) [illegible]	[illegible] 43.3%

	Group 1 (n=22)				Group 3			
	both yes	both no		disagree	both yes	both no		disagree
Was the discussion of the following the result of a problem:								
menstruation	(3) 13.6%	(12) 54.5%		(7) 31.8%	(1) 3.4%	(24) 82.8%		(4) 13.8%
dating and boyfriends	(6) 27.3%	(8) 36.4%		(8) 36.4%	(2) 6.7%	(20) 66.7%		(8) 26.7%
sexual intercourse	(4) 19.0%	(12) 57.1%		(5) 23.8%	0	(22) 84.6%		(4) 15.4%
conception	(3) 14.3%	(14) 66.7%		(14) 19.0%	0	(23) 88.5%		(3) 11.5%
birth control	(5) 22.4%	(9) 42.9%		(7) [illegible]	(1) 3.8%	(19) 73.1%		(6) 23.7%
morality	(6) 27.3%	(8) 36.4%		(8) [illegible]	(2) 7.7%	(20) 76.9%		(4) 15.4%

	Group 1 (n=22)				Group 3 (n=31)			
	both very comfortable	both comfortable	both not very comfortable	disagree	both very comfortable	both comfortable	both not very comfortable	disagree
How comfortable are you discussing the following with your mother or daughter:								
menstruation	(8) 36.4%	(2) 9.1%	(1) 4.5%	(11) 50.0%	(7) 23.3%	(3) 10.0%	(1) 3.3%	(19) 63.3%
dating and boyfriends	(4) 18.2%	(4) 18.2%	(1) 4.5%	(13) 59.1%	(10) 32.3%	(7) 22.6%	0	(14) 45.2%
sexual intercourse	(2) 9.1%	(1) 4.5%	(8) 36.4%	(11) 50.0%	(4) 13.3%	(6) 20.0%	(4) 13.3%	(16) 53.3%
conception	(4) 18.2%	(3) 13.6%	(4) 18.2%	(11) 50.0%	(6) 20.0%	(7) 23.3%	(1) 3.3%	(16) 53.3%
birth control	(4) 18.2%	(1) 4.5%	(5) 22.7%	(12) 54.5%	(5) 16.7%	(4) 13.3%	(2) 6.7%	(19) 61.3%
morality	(4) 18.2%	(1) 4.5%	(3) 13.6%	(14) 63.6%	(8) 25.8%	(4) 12.9%	0	(19) 61.3%

	Group 1 (n=22)				Group 3 (n=31)			
	both very comfortable	both comfortable	both not very comfortable	disagree	both very comfortable	both comfortable	both not very comfortable	disagree
How comfortable do you think your mother or daughter is discussing the following:								
menstruation	(6) 27.3%	(1) 4.5%	(2) 9.1%	(13) 59.1%	(10) 33.3%	(6) 20.0%	(1) 3.3%	(13) 43.3%
dating and boyfriends	(3) 13.6%	(6) 27.3%	(1) 4.5%	(12) 54.5%	(6) 19.4%	(7) 22.6%	0	(18) 58.1%
sexual intercourse	(1) 4.5%	(1) 4.5%	(12) 54.5%	(8) 36.4%	(3) 10.0%	(7) 23.3%	(9) 30.0%	(11) 36.7%
conception	(3) 13.6%	(1) 4.5%	(6) 27.3%	(12) 54.5%	(5) 16.7%	(9) 30.0%	(3) 10.0%	(13) 43.3%
birth control	(4) 18.2%	0	(7) 31.8%	(11) 50.0%	(5) 16.7%	(8) 26.7%	(5) 16.7%	(12) 38.7%
morality	(4) 18.2%	(1) 4.5%	(6) 27.3%	(11) 50.0%	(7) 23.3%	(7) 23.3%	(1) 3.3%	(15) 50.0%

APPENDIX J

CHI SQUARE

COMPARISON OF MOTHER AND DAUGHTER RESPONSE AGREEMENT REGARDING COMMUNICATION ABOUT SEXUALITY FOR GROUP 1 AND GROUP 3

	Group 1 (n=22)			Group 3 (n=31)		
Variable	Chi-square	d.f.	Significance	Chi-square	d.f.	Significance
closeness to mother or daughter	6.47037	4	0.1667	4.45391	2	0.1079
mother or daughter ever discussed:						
menstruation	0.27282	1	0.6014	4.24112	1	0.0395*
dating and boyfriends	8.04433	1	0.0046*	7.33553	1	0.0068*
sexual intercourse	2.39032	1	0.1221*	10.68700	1	0.0011*
conception	2.26526	1	0.1323	4.83136	1	0.0279*
birth control	3.35238	1	0.0671	7.35000	1	0.0067*
morality	0.00000	1	1.0000	0.00000	1	1.0000
discussed in last six months:						
menstruation	0.52071	1	0.4705	6.24218	1	0.0125*
dating and boyfriends	0.94278	1	0.3316	3.58686	1	0.0582
sexual intercourse	0.01473	1	0.9034	13.50719	1	0.0002*
conception	0.39286	1	0.5308	8.87494	1	0.0029*
birth control	0.36885	1	0.5436	5.61774	1	0.0178*
morality	0.05392	1	0.8164	0.11546	1	0.7340
discussed before or after the event:						
menstruation	3.54972	4	0.4704	10.68307	4	0.0304*
dating and boyfriends	3.03143	4	0.5526	32.83098	4	0.0000*
sexual intercourse	6.396582	4	0.1714	14.01006	2	0.0009*
conception	7.15000	4	0.1282	11.63488	2	0.0030*
birth control	12.30357	4	0.0152*	15.23785	4	0.0042*
morality	5.15370	4	0.2719	4.70047	4	0.3194

who initiated discussion of:						
menstruation	8.96296	4	0.0620	10.78070	4	0.0291*
dating and boyfriends	3.01099	4	0.5560	20.45195	4	0.0004*
sexual intercourse	5.62487	4	0.2290	20.26632	4	0.0004*
conception	8.58461	4	0.0724	22.53015	4	0.0002*
birth control	5.08547	4	0.2786	17.97582	4	0.0012*
morality	3.25980	4	0.5153	3.51056	4	0.4763
a problem resulted in discussion of:						
menstruation	0.51996	1	0.4709*	9.26885	2	0.0097*
dating and boyfriends	0.75214	1	0.3858	0.27699	1	0.5987
sexual intercourse	2.83260	1	0.0924*	0.00000	1	1.0000
conception	3.93750	1	0.0472*	0.00000	1	1.0000
birth control	1.16932	1	0.2795	0.00000	1	1.0000
morality	1.02307	1	0.3118	2.06708	1	0.1505
own comfort discussing:						
menstruation	11.70513	4	0.0197*	4.69615	4	0.3199
dating and boyfriends	3.87522	4	0.4232	1.80349	2	0.4059
sexual intercourse	9.34920	4	0.0529	5.84741	4	0.2108
conception	7.08380	4	0.1315	2.41026	4	0.6608
birth control	9.65556	4	0.0466*	8.42848	4	0.0771
morality	3.79179	4	0.4349	3.22345	4	0.5212
mother's or daughter's comfort discussing:						
menstruation	8.86285	4	0.0646	7.58129	4	0.1082
dating and boyfriends	4.82738	4	0.3055	4.07068	4	0.3965
sexual intercourse	4.77247	4	0.3114	16.50000	4	0.0024*
conception	5.95979	4	0.2022	13.67882	4	0.0084*
birth control	8.38095	4	0.0786	11.35714	4	0.0228*
morality	2.20509	4	0.6981	4.17803	4	0.3824

* Significant

APPENDIX K

FREQUENCY AND PERCENTAGE DISTRIBUTION OF RESPONSES RELATED TO MOTHER AND DAUGHTER COMMUNICATION ABOUT SEXUALITY FOR GROUP 1, GROUP 2 AND GROUP 3

How close do you feel to your mother or daughter?

	GROUP 1		GROUP 2	GROUP 3	
	Daughter	Mother	Daughter	Daughter	Mother
very close	(9) 40.9%	(11) 50.0%	(4) 33.3%	(23) 74.2%	(19) 61.3%
close	(10) 45.5%	(8) 36.4%	(5) 41.7%	(7) 22.6%	(12) 38.7%
not close	(3) 13.6%	(3) 13.6%	(3) 25.0%	(1) 3.2%	(0) 0.0%
no answer	(0) 0.0%	(0) 0.0%	(0) 0.0%	(0) 0.0%	(0) 0.0%
n	22	22	12	31	31

Have you ever discussed menstruation?

	GROUP 1		GROUP 2	GROUP 3	
	Daughter	Mother	Daughter	Daughter	Mother
yes	(16) 72.7%	(21) 95.5%	(7) 58.3%	(25) 80.6%	(29) 93.5%
no	(6) 27.3%	(1) 4.5%	(5) 41.7%	(6) 19.4%	(2) 6.5%
no answer	(0) 0.0%	(0) 0.0%	(0) 0.0%	(0) 0.0%	(0) 0.0%
n	22	22	12	31	31

Have you ever discussed dating and boyfriends?

	GROUP 1		GROUP 2	GROUP 3	
	Daughter	Mother	Daughter	Daughter	Mother
yes	(14) 63.6%	(17) 77.3%	(8) 66.7%	(27) 87.1%	(29) 93.5%
no	(8) 36.4%	(5) 22.7%	(4) 33.3%	(4) 12.9%	(2) 6.5%
no answer	(0) 0.0%	(0) 0.0%	(0) 0.0%	(0) 0.0%	(0) 0.0%
n	22	22	12	31	31

Have you ever discussed sexual intercourse?

	GROUP 1		GROUP 2	GROUP 3	
	Daughter	Mother	Daughter	Daughter	Mother
yes	(10) 45.5%	(15) 68.2%	(4) 33.3%	(19) 61.3%	(20) 64.5%
no	(12) 54.5%	(7) 31.8%	(8) 66.7%	(12) 38.7%	(11) 35.5%
no answer	(0) 0.0%	(0) 0.0%	(0) 0.0%	(0) 0.0%	(0) 0.0%
n	22	22	12	31	31

Have you ever discussed conception?

	GROUP 1		GROUP 2	GROUP 3	
	Daughter	Mother	Daughter	Daughter	Mother
yes	(13) 59.1%	(17) 77.3%	(6) 50.0%	(21) 67.7%	(22) 71.0%
no	(9) 40.9%	(5) 22.7%	(6) 50.0%	(10) 32.3%	(9) 29.0%
no answer	(0) 0.0%	(0) 0.0%	(0) 0.0%	(0) 0.0%	(0) 0.0%
n	22	22	12	31	31

Have you ever discussed birth control?

	GROUP 1		GROUP 2	GROUP 3	
	Daughter	Mother	Daughter	Daughter	Mother
yes	(11) 50.0%	(15) 68.2%	(6) 50.0%	(16) 51.6%	(20) 64.5%
no	(11) 50.0%	(7) 31.8%	(6) 50.0%	(15) 48.4%	(10) 32.3%
no answer	(0) 0.0%	(0) 0.0%	(0) 0.0%	(0) 0.0%	(1) 3.2%
n	22	22	12	31	31

Have you ever discussed morality?

	GROUP 1		GROUP 2	GROUP 3	
	Daughter	Mother	Daughter	Daughter	Mother
yes	(13) 59.1%	(18) 81.8%	(9) 75.0%	(24) 77.4%	(27) 87.1%
no	(9) 40.9%	(4) 18.2%	(3) 25.0%	(7) 22.6%	(4) 12.9%
no answer	(0) 0.0%	(0) 0.0%	(0) 0.0%	(0) 0.0%	(0) 0.0%
n	22	22	12	31	31

Have you discussed menstruation in the last six months?

	GROUP 1		GROUP 2	GROUP 3	
	Daughter	Mother	Daughter	Daughter	Mother
yes	(13) 59.1%	(13) 59.1%	(5) 41.7%	(19) 61.3%	(20) 64.5%
no	(9) 40.9%	(9) 40.9%	(7) 58.3%	(12) 38.7%	(11) 35.5%
no answer	(0) 0.0%	(0) 0.0%	(0) 0.0%	(0) 0.0%	(0) 0.0%
n	22	22	12	31	31

Have you discussed dating and boyfriends in the last six months

	GROUP 1		GROUP 2	GROUP 3	
	Daughter	Mother	Daughter	Daughter	Mother
yes	(13) 59.1%	(18) 81.8%	(6) 50.0%	(26) 83.9%	(25) 82.6%
no	(9) 40.9%	(4) 18.2%	(6) 50.0%	(5) 16.1%	(6) 19.4%
no answer	(0) 0.0%	(0) 0.0%	(0) 0.0%	(0) 0.0%	(0) 0.0%
n	22	22	12	31	31

Have you discussed sexual intercourse in the last six months?

	GROUP 1		GROUP 2	GROUP 3	
	Daughter	Mother	Daughter	Daughter	Mother
yes	(10) 45.5%	(14) 63.6%	(5) 41.7%	(12) 38.7%	(12) 38.7%
no	(12) 54.5%	(8) 36.4%	(7) 58.3%	(19) 61.3%	(19) ~~61.3~~%
no answer	(0) 0.0%	(0) 0.0%	(0) 0.0%	(0) 0.0%	(0) 0.0%
n	22	22	12	31	31

Have you discussed conception in the last six months?

	GROUP 1		GROUP 2	GROUP 3	
	Daughter	Mother	Daughter	Daughter	Mother
yes	(7) 31.8%	(12) 54.5%	(6) 50.0%	(7) 22.6%	(10) 32.3%
no	(15) 68.2%	(10) 45.5%	(6) 50.0%	(24) 77.4%	(21) 67.7%
no answer	(0) 0.0%	(0) 0.0%	(0) 0.0%	(0) 0.0%	(0) 0.0%
n	22	22	12	31	31

Have you discussed birth control in the last six months?

	GROUP 1		GROUP 2	GROUP 3	
	Daughter	Mother	Daughter	Daughter	Mother
yes	(15) 68.2%	(16) 72.2%	(5) 41.7%	(11) 35.5%	(10) 32.3%
no	(7) 31.8%	(6) 27.3%	(7) 58.3%	(20) 64.5%	(21) 67.7%
no answer	(0) 0.0%	(0) 0.0%	(0) 0.0%	(0) 0.0%	(0) 0.0%
n	22	22	12	31	31

Have you discussed morality in the last six months?

	GROUP 1		GROUP 2	GROUP 3	
	Daughter	Mother	Daughter	Daughter	Mother
yes	(12) 54.5%	(17) 77.3%	(5) 41.7%	(19) 61.3%	(8) 25.8%
no	(10) 45.5%	(5) 22.7%	(7) 58.3%	(12) 38.7%	(23) 74.2%
no answer	(0) 0.0%	(0) 0.0%	(0) 0.0%	(0) 0.0%	(0) 0.0%
n	22	22	12	31	31

Did you discuss menstruation before or after the event?

	GROUP 1		GROUP 2	GROUP 3	
	Daughter	Mother	Daughter	Daughter	Mother
before	(11) 50.0%	(17) 77.3%	(7) 58.3%	(26) 83.9%	(25) 80.6%
after	(7) 31.8%	(2) 9.1%	(1) 8.3%	(1) 3.2%	(3) 9.7%
not discussed	(4) 18.2%	(3) 13.6%	(4) 33.3%	(4) 12.9%	(3) 9.7%
no answer	(0) 0.0%	(0) 0.0%	(0) 0.0%	(0) 0.0%	(0) 0.0%
n	22	22	12	31	31

Did you discuss dating and boyfriends before or after the event?

	GROUP 1		GROUP 2	GROUP 3	
	Daughter	Mother	Daughter	Daughter	Mother
before	(10) 45.5%	(11) 50.0%	(5) 41.7%	(19) 61.3%	(20) 64.5%
after	(7) 31.8%	(10) 45.5%	(4) 33.3%	(9) 29.0%	(8) 25.8%
not discussed	(5) 22.7%	(1) 4.5%	(3) 25.0%	(3) 9.7%	(3) 9.7%
no answer	(0) 0.0%	(0) 0.0%	(0) 0.0%	(0) 0.0%	(0) 0.0%
n	22	22	12	31	31

Did you discuss sexual intercourse before or after the event?

	GROUP 1		GROUP 2	GROUP 3	
	Daughter	Mother	Daughter	Daughter	Mother
before	(6) 27.3%	(11) 50.0%	(3) 25.0%	(20) 64.5%	(19) 61.3%
after	(3) 13.6%	(6) 27.3%	(3) 25.0%	(0) 0.0%	(2) 6.5%
not discussed	(13) 59.1%	(5) 22.7%	(6) 50.0%	(11) 35.5	(10) 32.3%
no answer	(0) 0.0%	(0) 0.0%	(0) 0.0%	(0) 0.0%	(0) 0.0%
n	22	22	12	31	31

Did you discuss conception before or after the event?

	GROUP 1		GROUP 2	GROUP 3	
	Daughter	Mother	Daughter	Daughter	Mother
before	(11) 50.0%	(12) 54.5%	(6) 50.0%	(22) 71.0%	(18) 58.1%
after	(1) 4.5%	(3) 13.6%	(0) 0.0%	(0) 0.0%	(2) 6.5%
not discussed	(10) 45.5%	(7) 31.8%	(6) 50.0%	(9) 29.0%	(11) 35.5%
no answer	(0) 0.0%	(0) 0.0%	(0) 0.0%	(0) 0.0%	(0) 0.0%
n	22	22	12	31	31

Did you discuss birth control before or after the event?

	GROUP 1		GROUP 2	GROUP 3	
	Daughter	Mother	Daughter	Daughter	Mother
before	(7) 31.8%	(11) 50.0%	(4) 33.3%	(16) 51.6%	(16) 51.6%
after	(8) 36.4%	(3) 13.6%	(4) 33.3%	(1) 3.2%	(2) 6.5%
not discussed	(7) 31.8%	(8) 36.4%	(4) 33.3%	(14) 45.2%	(13) 41.9%
no answer	(0) 0.0%	(0) 0.0%	(0) 0.0%	(0) 0.0%	(0) 0.0%
n	22	22	12	31	31

Did you discuss morality before or after the event?

	GROUP 1		GROUP 2	GROUP 3	
	Daughter	Mother	Daughter	Daughter	Mother
before	(9) 40.9%	(16) 72.7%	(7) 58.3%	(22) 71.0%	(23) 74.2%
after	(3) 13.6%	(3) 13.6%	(2) 16.7%	(2) 6.5%	(3) 9.7%
not discussed	(10) 45.5%	(3) 13.6%	(3) 25.0%	(7) 22.6%	(5) 16.1%
no answer	(0) 0.0%	(0) 0.0%	(0) 0.0%	(0) 0.0%	(0) 0.0%
n	22	22	12	31	31

Who initiated the discussion of menstruation?

	GROUP 1		GROUP 2	GROUP 3	
	Daughter	Mother	Daughter	Daughter	Mother
mother	(12) 54.5%	(18) 81.8%	(5) 41.7%	(20) 64.5%	(18) 58.1%
daughter	(5) 22.7%	(2) 9.9%	(3) 25.0%	(7) 22.6%	(10) 32.3%
not discussed	(5) 22.7%	(2) 9.9%	(4) 33.3%	(4) 12.9%	(2) 6.5%
no answer	(0) 0.0%	(0) 0.0%	(0) 0.0%	(0) 0.0%	(1) 3.2%
n	22	22	12	31	31

Who initiated the discussion of dating and boyfriends?

	GROUP 1		GROUP 2	GROUP 3	
	Daughter	Mother	Daughter	Daughter	Mother
mother	(9) 40.9%	(13) 59.1%	(3) 25.0%	(11) 35.5%	(12) 38.7%
daughter	(6) 27.3%	(7) 31.8%	(5) 41.7%	(17) 54.8%	(15) 48.4%
not discussed	(7) 31.8%	(1) 4.5%	(4) 33.3%	(3) 9.7%	(3) 9.7%
no answer	(0) 0.0%	(1) 4.5%	(0) 0.0%	(0) 0.0%	(1) 3.2%
n	22	22	12	31	31

Who initiated the discussion of sexual intercourse?

	GROUP 1		GROUP 2	GROUP 3	
	Daughter	Mother	Daughter	Daughter	Mother
mother	(5) 22.7%	(11) 50.0%	(4) 33.3%	(12) 38.7%	(14) 45.2%
daughter	(4) 18.2%	(6) 27.3%	(2) 16.7%	(7) 22.6%	(5) 16.1%
not discussed	(13) 59.1%	(5) 22.7%	(6) 50.0%	(12) 38.7%	(11) 35.5%
no answer	(1) 4.5%	(0) 0.0%	(0) 0.0%	(0) 0.0%	(1) 3.2%
n	22	22	12	31	31

Who initiated the discussion of conception?

	GROUP 1		GROUP 2	GROUP 3	
	Daughter	Mother	Daughter	Daughter	Mother
mother	(11) 50.0%	(13) 59.1%	(6) 50.0%	(14) 45.2%	(11) 35.5%
daughter	(2) 9.1%	(1) 4.5%	(0) 0.0%	(7) 22.6%	(7) 22.6%
not discussed	(9) 40.9%	(7) 31.8%	(6) 50.0%	(10) 32.3%	(11) 35.5%
no answer	(0) 0.0%	(1) 4.5%	(0) 0.0%	(0) 0.0%	(2) 6.5%
n	22	22	12	31	31

Who initiated the discussion of birth control?

	GROUP 1		GROUP 2	GROUP 3	
	Daughter	Mother	Daughter	Daughter	Mother
mother	(7) 31.8%	(13) 59.1%	(7) 58.3%	(10) 32.3%	(15) 46.7%
daughter	(9) 40.9%	(3) 13.6%	(2) 16.7%	(7) 22.6%	(3) 9.7%
not discussed	(6) 27.3%	(5) 22.7%	(3) 25.0%	(14) 45.2%	(12) 38.7%
no answer	(0) 0.0%	(1) 4.5%	(0) 0.0%	(0) 0.0%	(1) 3.2%
n	22	22	12	31	31

Who initiated the discussion of morality?

	GROUP 1		GROUP 2	GROUP 3	
	Daughter	Mother	Daughter	Daughter	Mother
mother	(13) 59.1%	(17) 77.3%	(9) 75.0%	(18) 58.1%	(23) 74.2%
daughter	(1) 4.5%	(1) 4.5%	(0) 0.0%	(5) 16.1%	(2) 6.5%
not discussed	(8) 36.4%	(3) 13.6%	(3) 25.0%	(8) 25.8%	(5) 16.1%
no answer	(0) 0.0%	(1) 4.5%	(0) 0.0%	(0) 0.0%	(1) 3.2%
n	22	22	12	31	31

Was the discussion of menstruation the result of a problem?

	GROUP 1		GROUP 2	GROUP 3	
	Daughter	Mother	Daughter	Daughter	Mother
yes	(8) 36.4%	(5) 22.7%	(5) 41.7%	(4) 12.9%	(3) 9.7%
no	(14) 63.6%	(17) 77.3%	(7) 58.3%	(25) 80.6%	(27) 87.1%
no answer	(0) 0.0%	(0) 0.0%	(0) 0.0%	(2) 6.5%	(1) 3.2%
n	22	22	12	31	31

Was the discussion of dating and boyfriends the result of a problem?

	GROUP 1		GROUP 2	GROUP 3	
	Daughter	Mother	Daughter	Daughter	Mother
yes	(9) 40.9%	(11) 50.0%	(7) 58.3%	(8) 25.8%	(4) 12.9%
no	(13) 59.1%	(11) 50.0%	(5) 41.7%	(22) 71.0%	(26) 83.9%
no answer	(0) 0.0%	(0) 0.0%	(0) 0.0%	(1) 3.2%	(1) 3.2%
n	22	22	12	31	31

Was the discussion of sexual intercourse the result of a problem?

	GROUP 1		GROUP 2	GROUP 3	
	Daughter	Mother	Daughter	Daughter	Mother
yes	(5) 22.7%	(8) 36.4%	(9) 75.0%	(3) 9.7%	(2) 6.5%
no	(17) 77.3%	(13) 59.1%	(3) 25.0%	(24) 77.4%	(27) 87.1%
no answer	(0) 0.0%	(1) 4.5%	(0) 0.0%	(4) 12.9%	(2) 6.5%
n	22	22	12	31	31

Was the discussion of conception the result of a problem?

	GROUP 1		GROUP 2	GROUP 3	
	Daughter	Mother	Daughter	Daughter	Mother
yes	(7) 31.8%	(3) 13.6%	(8) 66.7%	(2) 6.5%	(2) 6.5%
no	(15) 68.2%	(18) 81.8%	(4) 33.3%	(25) 80.6%	(28) 90.3%
no answer	(0) 0.0%	(1) 4.5%	(0) 0.0%	(4) 12.9%	(1) 3.2%
n	22	22	12	31	31

Was the discussion of birth control the result of a problem?

	GROUP 1		GROUP 2	GROUP 3	
	Daughter	Mother	Daughter	Daughter	Mother
yes	(7) 31.8%	(10) 45.5%	(8) 66.7%	(4) 12.9%	(5) 16.1%
no	(15) 68.2%	(11) 50.0%	(4) 33.3%	(25) 74.2%	(24) 77.4%
no answer	(0) 0.0%	(1) 4.5%	(0) 0.0%	(4) 12.9%	(2) 6.5%
n	22	22	12	31	31

Was the discussion of morality the result of a problem?

	GROUP 1		GROUP 2	GROUP 3	
	Daughter	Mother	Daughter	Daughter	Mother
yes	(8) 36.4%	(12) 54.5%	(6) 50.0%	(5) 16.1%	(4) 12.9%
no	(14) 63.6%	(10) 45.5%	(6) 50.0%	(25) 74.2%	(25) 80.6%
no answer	(0) 0.0%	(0) 0.0%	(0) 0.0%	(3) 9.7%	(2) 6.5%
n	22	22	12	31	31

How comfortable are you discussing menstruation with your mother or daughter?

	GROUP 1		GROUP 2	GROUP 3	
	Daughter	Mother	Daughter	Daughter	Mother
very comfortable	(8) 36.4%	(13) 59.1%	(3) 25.0%	(10) 32.3%	(20) 64.5%
comfortable	(8) 36.4%	(6) 27.3%	(6) 50.0%	(13) 41.9%	(10) 32.3%
not very comfortable	(6) 27.3%	(3) 13.6%	(3) 25.0%	(7) 22.6%	(1) 3.2%
no answer	(0) 0.0%	(0) 0.0%	(0) 0.0%	(1) 3.2%	(0) 0.0%
n	22	22	12	31	31

How comfortable are you discussing dating and boyfriends with your mother or daughter?

	GROUP 1		GROUP 2	GROUP 3	
	Daughter	Mother	Daughter	Daughter	Mother
very comfortable	(7) 31.8%	(9) 40.9%	(4) 33.3%	(15) 48.4%	(17) 54.8%
comfortable	(9) 40.9%	(9) 40.9%	(4) 33.3%	(13) 41.9%	(14) 45.
not very comfortable	(6) 27.3%	(4) 18.2%	(4) 33.3%	(3) 9.7%	(0) 0.
no answer	(0) 0.0%	(0) 0.0%	(0) 0.0%	(0) 0.0%	(0) 0.
n	22	22	12	31	31

How comfortable are you discussing sexual intercourse with your mother or daughter?

	GROUP 1		GROUP 2	GROUP 3	
	Daughter	Mother	Daughter	Daughter	Mother
very comfortable	(2) 9.1%	(5) 22.7%	(1) 8.3%	(5) 16.1%	(11) 35.5%
comfortable	(6) 27.3%	(6) 27.3%	(1) 8.3%	(12) 38.7%	(14) 45.2%
not very comfortable	(14) 63.6%	(11) 50.0%	(10) 83.3%	(13) 41.9%	(6) 19.4%
no answer	(0) 0.0%	(0) 0.0%	(0) 0.0%	(1) 3.2%	(0) 0.0%
n	22	22	12	31	31

How comfortable are you discussing conception with your mother or daughter?

	GROUP 1		GROUP 2	GROUP 3	
	Daughter	Mother	Daughter	Daughter	Mother
very comfortable	(6) 27.3%	(9) 40.9%	(3) 25.0%	(10) 32.3%	(15) 48.4%
comfortable	(8) 36.4%	(8) 36.4%	(2) 16.7%	(15) 48.4%	(14) 45.2%
not very comfortable	(8) 36.4%	(5) 22.7%	(7) 58.3%	(5) 16.1%	(2) 6.5%
no answer	(0) 0.0%	(0) 0.0%	(0) 0.0%	(1) 3.2%	(0) 0.0%
n	22	22	12	31	31

How comfortable are you discussing birth control with your mother or daughter?

	GROUP 1		GROUP 2	GROUP 3	
	Daughter	Mother	Daughter	Daughter	Mother
very comfortable	(4) 18.2%	(10) 45.5%	(2) 16.7%	(4) 29.0%	(17) 54.8%
comfortable	(9) 40.9%	(4) 18.2%	(3) 25.0%	(17) 54.8%	(10) 32.3%
not very comfortable	(9) 40.9%	(8) 36.4%	(7) 58.3%	(4) 12.9%	(4) 12.9%
no answer	(0) 0.0%	(0) 0.0%	(0) 0.0%	(1) 3.2%	(0) 0.0%
n	22	22	12	31	31

How comfortable are you discussing morality with your mother or daughter?

	GROUP 1		GROUP 2	GROUP 3	
	Daughter	Mother	Daughter	Daughter	Mother
very comfortable	(6) 27.3%	(13) 59.1%	(2) 16.7%	(11) 35.5%	(19) 61.3%
comfortable	(5) 22.7%	(4) 18.2%	(6) 50.0%	(13) 41.9%	(11) 35.5%
not very comfortable	(11) 50.0%	(5) 22.7%	(4) 33.3%	(7) 22.6%	(1) 3.2%
no answer	(0) 0.0%	(0) 0.0%	(0) 0.0%	(0) 0.0%	(0) 0.0%
n	22	22	12	31	31

How comfortable do you think that your mother or daughter is discussing menstruation?

	GROUP 1		GROUP 2	GROUP 3	
	Daughter	Mother	Daughter	Daughter	Mother
very comfortable	(10) 45.5%	(9) 40.9%	(4) 33.3%	(15) 48.4%	(13) 41.9%
comfortable	(7) 31.8%	(8) 36.4%	(4) 33.3%	(11) 35.5%	(14) 45.2%
not very comfortable	(5) 22.7%	(5) 22.7%	(4) 33.3%	(4) 12.9%	(4) 12.9%
no answer	(0) 0.0%	(0) 0.0%	(0) 0.0%	(1) 3.2%	(0) 0.0%
n	22	22	12	31	31

How comfortable do you think that your mother or daughter is discussing dating and boyfriends?

	GROUP 1		GROUP 2	GROUP 3	
	Daughter	Mother	Daughter	Daughter	Mother
very comfortable	(7) 31.8%	(4) 18.2%	(2) 16.7%	(13) 41.9%	(10) 32.3%
comfortable	(11) 50.0%	(12) 54.5%	(6) 50.0%	(13) 41.9%	(17) 54.8%
not very comfortable	(4) 18.2%	(6) 27.3%	(4) 33.3%	(5) 16.1%	(4) 12.9%
no answer	(0) 0.0%	(0) 0.0%	(0) 0.0%	(0) 0.0%	(0) 0.0%
n	22	22	12	31	31

How comfortable do you think that your mother or daughter is discussing sexual intercourse?

	GROUP 1		GROUP 2	GROUP 3	
	Daughter	Mother	Daughter	Daughter	Mother
very comfortable	(5) 22.7%	(3) 13.6%	(1) 8.3%	(7) 22.6%	(4) 12.9%
comfortable	(4) 18.2%	(2) 9.1%	(2) 16.7%	(14) 45.2%	(11) 35.5%
not very comfortable	(13) 59.1%	(17) 77.3%	(9) 75.0%	(9) 29.0%	(16) 51.6%
no answer	(0) 0.0%	(0) 0.0%	(0) 0.0%	(1) 3.2%	(0) 0.0%
n	22	22	12	31	31

How comfortable do you think that your mother or daughter is discussing conception?

	GROUP 1		GROUP 2	GROUP 3	
	Daughter	Mother	Daughter	Daughter	Mother
very comfortable	(7) 31.8%	(8) 36.4%	(2) 16.7%	(11) 35.5%	(5) 16.1%
comfortable	(6) 27.3%	(5) 22.7%	(4) 33.3%	(13) 41.9%	(19) 61.3%
not very comfortable	(9) 40.9%	(9) 40.9%	(6) 50.0%	(6) 19.4%	(7) 22.6%
no answer	(0) 0.0%	(0) 0.0%	(0) 0.0%	(1) 3.2%	(0) 0.0%
n	22	22	12	31	31

How comfortable do you think that your mother or daughter is discussing birth control?

	GROUP 1		GROUP 2	GROUP 3	
	Daughter	Mother	Daughter	Daughter	Mother
very comfortable	(7 31.8 %	(6) 27.3%	(2) 16.7%	(9) 29.0%	(10) 32.3%
comfortable	(5) 22.7%	(4) 18.2%	(4) 33.3%	(14) 45.2%	(13) 41.9%
not very comfortable	(10) 45.5%	(12) 54.5%	(6) 50.0%	(7) 22.6%	(8) 25.8%
no answer	(0) 0.0%	(0) 0.0%	(0) 0.0%	(1) 3.2%	(0) 0.0%
n	22	22	12	31	31

How comfortable do you think that your mother or daughter is discussing morality?

	GROUP 1		GROUP 2	GROUP 3	
	Daughter	Mother	Daughter	Daughter	Mother
very comfortable	(8) 36.4%	(7) 31.8%	(5) 41.7%	(12) 38.7%	(11) 35.5%
comfortable	(5) 22.7%	(3) 13.6%	(2) 16.7%	(13) 41.9%	(15) 48.4%
not very comfortable	(9) 40.9%	(12) 54.5%	(5) 41.7%	(6) 19.4%	(4) 12.9%
no answer	(0) 0.0%	(0) 0.0%	(0) 0.0%	(0) 0.0%	(1) 3.2%
n	22	22	12	31	31

APPENDIX L

CHI SQUARE

COMPARISON OF PAIRED MOTHER AND DAUGHTER RESPONSES RELATED TO RISK FACTORS AND COMMUNICATION ABOUT SEXUALITY FOR GROUP 1, GROUP 2 AND GROUP 3

Variable	Chi-square	d.f.	Significance	Direction
age	15.51920	21	0.7960	
birth order	1.05775	2	0.5893	
family composition	1.22120	3	0.7479	
meaning of 'mother'	2.18785	3	0.5343	
mother's level of education	8.06999	3	0.0446*	G1<G3
daughter's level of education	15.28334	7	0.0325*	G1>G3
age at onset of dating	6.08468	3	0.1076	
sexual spontaneity	0.03682	1	0.8478	
source of sexual information:				
father	3.44953	2	0.1782	
mother	7.15921	2	0.0279*	G1<G3
brother	0.54235	2	0.7625	
sister	5.35837	2	0.0686	
other relatives	2.16190	2	0.3393	
friends, classmates	13.65308	2	0.0011*	G1<G3
doctor, counselor, teacher	5.21355	2	0.0738	
books and pamphlets	19.16869	2	0.0001*	G1<G3
other sources	4.67477	2	0.0966	
no knowledge of birth control	0.54235	2	0.7625	
source of birth control information:				
father	1.11391	2	0.5730	
mother	3.82910	2	0.1474	
brother	0			
sister	2.49230	2	0.2876	
other relatives	4.03319	2	0.1331	
friends, classmates	7.72772	2	0.0210*	G1<G3
doctor, counselor, teacher	17.25708	2	0.0002*	G1<G3
books and pamphlets	18.07893	2	0.0001*	G1<G3
other sources	2.26318	2	0.3225	
no knowledge of birth control	4.03319	2	0.1331	
parents find it easy to talk to their teenagers about sexuality	0.03066	1	0.8610	
parents find it easy to talk to their teenagers about birth control	0.01423	1	0.9050	
discussion of birth control with mother before first intercourse	0.05181	1	0.8199	
discussion of birth control with mother after first intercourse	0.02134	1	0.8839	
sex education at school	0.02594	1	0.8720	
closeness to mother or daughter	4.53583	2	0.1035	

ever discussed:				
menstruation	0.00000	1	1.0000	
dating and boyfriends	1.72325	1	0.1893	
sexual intercourse	0.07710	1	0.7813	
conception	0.03875	1	0.8439	
birth control	0.01324	1	0.9084	
morality	0.01948	1	0.8890	
discussed in the last six months:				
menstruation	0.01298	1	0.6881	
dating and boyfriends	0.00000	1	1.0000	
sexual intercourse	3.19928	1	0.0737	
conception	2.63266	1	0.1047	
birth control	8.43281	1	0.0037*	G1<G3
morality	0.00000	1	1.0000	
discussion before or after the event of:				
menstruation	0.20131	2	0.9042	
dating and boyfriends	2.37532	2	0.3049	
sexual intercourse	4.39853	2	0.1109	
conception	0.78317	2	0.6760	
birth control	0.81150	2	0.6665	
morality	0.23488	2	0.8892	
who initiated discussion of:				
menstruation	4.20202	2	0.1223	
dating and boyfriends	2.43674	2	0.2957	
sexual intercourse	1.50578	2	0.4710	
conception	4.38788	2	0.1115	
birth control	1.48316	2	0.4764	
morality	0.14976	2	0.9279	
a problem resulted in the discussion of:				
menstruation	2.31107	2	0.3149	
dating and boyfriends	6.62329	1	0.0101*	G1>G3
sexual intercourse	5.58805	1	0.0181*	G1>G3
conception	0.17818	1	0.6729	
birth control	5.35226	1	0.0207*	G1>G3
morality	7.84959	1	0.0051*	G1>G3
own comfort discussing:				
menstruation	2.01464	2	0.3652	
dating and boyfriends	6.19895	2	0.0451*	G1<G3
sexual intercourse	5.55239	2	0.0623	
conception	2.97970	2	0.2254	
birth control	4.31572	2	0.1156	
morality	5.69423	2	0.0580	
mother's, daughter's comfort discussing:				
menstruation	0.97455	2	0.6143	
dating and boyfriends	2.37364	2	0.3052	
sexual intercourse	5.02039	2	0.0813	
conception	7.80576	2	0.0202*	G1<G3
birth control	5.18594	2	0.0748	
morality	11.94074	2	0.0026*	G1<G3
honesty	0.88174	2	0.6435	

APPENDIX M

CHI SQUARE

COMPARISON OF ALL THE DAUGHTERS' RESPONSES RELATED TO RISK FACTORS AND COMMUNICATION ABOUT SEXUALITY FOR GROUP 1C AND GROUP 3C

Variable	Chi-square	d.f.	Significance	Direction
age	26.46076	8	0.0009*	G1C>G3C
birth order	2.72924	2	0.2555	
family composition	0.35320	3	0.9497	
meaning of 'mother'	1.53147	3	0.6750	
mother's level of education	1.66667	3	0.6444	
daughter's level of education	21.12877	8	0.0068*	G1C<G3C
age at onset of dating	16.26284	4	0.0027*	G1C>G3C
sexual spontaneity	0.38050	1	0.5373	
source of sexual information:				
father	0.01156	1	0.9144	
mother	7.34942	1	0.0067*	G1C<G3C
brother	0.37463	1	0.5405	
sister	0.18886	1	0.6639	
other relatives	0.17749	1	0.6735	
friends, classmates	0.00113	1	0.9732	
doctor, counselor, teacher	0.17225	1	0.6781	
books and pamphlets	1.32149	1	0.2503	
other sources	0.00000	1	1.0000	
no knowledge of birth control	0.00000	1	1.0000	
source of birth control information:				
father	0.00671	1	0.9347	
mother	1.32149	1	0.2503	
brother	0.00217	1	0.9629	
sister	0.50547	1	0.4771	
other relatives	0.00000	1	1.0000	
friends, classmates	0.68152	1	0.4091	
doctor, counselor, teacher	1.32149	1	0.2503	
books and pamphlets	0.11894	1	0.7302	
other sources	0.00000	1	1.0000	
no knowledge of birth control	2.99847	1	0.0833	
parents find it easy to talk to their teenagers about sexuality	2.51968	1	0.1124	
parents find it easy to talk to their teenagers about birth control	1.79681	1	0.1801	
discussion of birth control with mother before first intercourse	3.72656	1	0.0536	
discussion of birth control with mother after first intercourse	3.72656	1	0.0536	
sex education at school	2.51191	1	0.1130	
closeness to mother or daughter	9.13931	2	0.0104*	G1C<G3C

ever discussed:				
menstruation	1.41848	1	0.2337	
dating and boyfriends	3.25751	1	0.0711	
sexual intercourse	2.62471	1	0.1052	
conception	0.96359	1	0.3263	
birth control	0.01688	1	0.8966	
morality	1.26698	1	0.2603	
discussed in the last six months:				
menstruation	0.46098	1	0.4972	
dating and boyfriends	4.72160	1	0.0298*	G1C<G3C
sexual intercourse	0.19529	1	0.6580	
conception	1.86551	1	0.1720	
birth control	3.54081	1	0.0599	
morality	0.83650	1	0.3604	
discussion before or after the event of:				
menstruation	8.11114	2	0.0173*	G1C<G3C
dating and boyfriends	2.81084	2	0.2453	
sexual intercourse	12.19326	2	0.0023*	G1C<G3C
conception	3.46996	2	0.1764	
birth control	10.47747	2	0.0053	
morality	3.90294	2	0.1421	
who initiated discussion of:				
menstruation	2.09900	2	0.3501	
dating and boyfriends	5.77446	2	0.0557	
sexual intercourse	1.95184	2	0.3768	
conception	3.93803	2	0.1396	
birth control	2.50940	2	0.2852	
morality	3.40915	2	0.1818	
a problem resulted in the discussion of:				
menstruation	3.58612	1	0.0583	
dating and boyfriends	2.82771	1	0.0927	
sexual intercourse	5.35413	1	0.0207*	G1C>G3C
conception	8.34539	1	0.0039*	G1C>G3C
birth control	4.73654	1	0.0295*	G1C>G3C
morality	2.90803	1	0.0881	
own comfort discussing:				
menstruation	0.08499	2	0.9584	
dating and boyfriends	4.25522	2	0.1191	
sexual intercourse	4.85502	2	0.0883	
conception	5.82539	2	0.0543	
birth control	8.44506	2	0.0147*	G1C<G3C
morality	3.41826	2	0.1810	
mother's, daughter's comfort discussing:				
menstruation	1.71426	2	0.4244	
dating and boyfriends	1.81832	2	0.4029	
sexual intercourse	8.51178	2	0.0142*	G1C<G3C
conception	4.21491	2	0.1215	
birth control	4.37579	2	0.1122	
morality	4.91200	2	0.0858	
honesty	11.21877	3	0.0106*	G1C>G3C

APPENDIX N

PEARSON CORRELATION COEFFICIENTS

Mothers and daughters who have experienced adolescent pregnancy (Group 1)

	Comm1d	Comm1m	Comm2d	Comm2m	fhd	fhm	dRathus	mRathus
Comm1d	1.0000	.2288	.1532	.2652	-.0721	-.1398	.3462	.1070
Comm1m	.2288	1.0000	.0889	.2781	.0324	-.4006	.2042	-.1745
Comm2d	.1532	.0889	1.0000	.6788*	.1493	.3675	.4330	.3520
Comm2m	.2657	.2781	.6788	1.0000	.1774	.2893	.4359	.3341
fhd	-.0721	.0324	.1493	.1774	1.0000	-.0006	.2502	.3484
fhm	-.1398	-.4006	.3675	.2893	-.0006	1.0000	.1418	-.1318
dRathus	.3462	.2042	.4330*	.4359*	.2502	.1418	1.0000	.5018
mRathus	.1070	-.1745	.3520	.3341	.3484	-.1318	.5018*	1.0000

n = 22

Mothers and daughters who have not experienced an adolescent pregnancy (Group 3)

	Comm1d	Comm1m	Comm2d	Comm2m	fhd	fhm	dRathus	mRathus
Comm1d	1.0000	.5268	.4107	.2529	.2679	.0706	.2974	.0437
Comm1m	.5268*	1.0000	.0250	.1604	.3488	-.0526	.2149	-.0089
Comm2d	.4107*	.0250	1.0000	.7468	.2706	.5345	.3140	.2707
Comm2m	.2529	.1604	.7468*	1.0000	.2818	.6946	.2231	.2652
fhd	.2679	.3488	.2706	.2818	1.0000	.2028	.3411	.3217
fhm	.0706	-.0526	.5345*	.6946*	.2028	1.0000	.0374	.1974
dRathus	.2974	.2149	.3140	.2231	.3411	.0374	1.0000	.5600
mRathus	.0437	-.0089	.2707	.2652	.3217	.1974	.5600*	1.0000

n = 31

Comm1d: Communication responses Foothills - daughters
Comm1m: Communication responses Foothills - mothers
Comm2d: Communication responses Fox - daughters
Comm2m: Communication responses Fox - mothers
fhd: Foothills sexual knowledge - daughter
fhm: Foothills sexual knowledge - mother
dRathus: Rathus assertiveness scale - daughter
mRathus: Rathus assertiveness scale - mother

APPENDIX O

FREQUENCY AND PERCENTAGE DISTRIBUTION

OF RATHUS ASSERTIVENESS SCHEDULE RESPONSES FOR GROUP 1, GROUP 2 AND GROUP 3

Group 1

Daughter

Value	Frequency	Percent
-56	1	4.5
-52	1	4.5
-50	1	4.5
-45	1	4.5
-40	1	4.5
-30	1	4.5
-22	1	4.5
-13	1	4.5
-11	2	9.1
- 7	3	13.6
- 5	1	4.5
0	1	4.5
2	1	4.5
11	1	4.5
17	2	9.1
26	1	4.5
37	1	4.5
51	1	4.5
	----	-------
	22	100.0

mean -8.864
std. dev. 28.911

Mother

Value	Frequency	Percent
-60	1	4.5
-59	1	4.5
-52	1	4.5
-41	1	4.5
-39	2	9.1
-37	1	4.5
-24	1	4.5
-16	1	4.5
-15	3	13.6
-10	1	4.5
- 6	1	4.5
- 4	1	4.5
- 3	1	4.5
0	1	4.5
3	1	4.5
15	1	4.5
16	1	4.5
30	1	4.5
36	1	4.5
	----	-------
	22	100.0

mean -15.227
std. dev. 26.842

Group 2

	Daughter	
Value	Frequency	Percent
-38	1	8.3
-32	1	8.3
- 2	1	8.3
0	1	8.3
7	1	8.3
8	1	8.3
11	1	8.3
21	1	8.3
35	1	8.3
37	1	8.3
38	1	8.3
43	1	8.3
	----	-------
	12	100.0

mean -10.667
std. dev. 26.404

Group 3

	Daughter			Mother	
Value	Frequency	Percent	Value	Frequency	Percent
-49	1	3.2	-56	1	3.2
-37	1	3.2	-40	1	3.2
-35	1	3.2	-39	1	3.2
-22	1	3.2	-33	1	3.2
-17	1	3.2	-28	2	3.2
-16	1	3.2	-26	1	3.2
-14	1	3.2	-20	1	3.2
-10	1	3.2	-16	2	6.5
- 8	1	3.2	-13	1	3.2
- 4	5	16.1	-11	1	3.2
- 3	1	3.2	- 8	1	3.2
2	1	3.2	- 4	1	3.2
9	1	3.2	- 3	1	3.2
12	1	3.2	1	2	6.5
16	1	3.2	6	1	3.2
18	2	6.5	7	1	3.2
25	1	3.2	9	1	3.2
26	1	3.2	11	1	3.2
27	1	3.2	12	2	6.5
30	1	3.2	13	1	3.2
31	1	3.2	17	2	6.5
32	1	3.2	18	2	6.5
41	1	3.2	19	1	3.2
48	1	3.2	21	1	3.2
52	1	3.2	33	1	3.2
67	1	3.2	38	1	3.2
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	31	100.0		31	100.0

mean 7.194
std. dev. 27.138

mean -1.935
std. dev. 22.574

APPENDIX P

ONEWAY ANALYSIS OF VARIANCE

COMPARISON OF RESPONSES FOR GROUP 1, GROUP 2 AND GROUP 3

Variable		n	mean	s.d.	d.f.	f	p	Direction
Foothills sexual knowledge	G1	22	10.3636	3.4163	64	3.1757	0.0486*	G2>G3
	G2	12	11.0833	1.3790				
	G3	31	8.6452	3.6014				
Honesty in answering	G1	22	3.3636	0.6580	64	6.3554	0.0031*	G1&2>G3
	G2	12	3.5833	0.5149				
	G3	31	2.9032	0.6509				
Age	G1	22	16.3182	1.0861	64	11.9741	0.0000*	G1&2>G3
	G2	12	16.8333	1.1146				
	G3	31	14.5806	2.0129				
Closeness to mother or daughter	G1	22	1.2727	0.7025	64	5.3071	0.0075*	G1&2<G3
	G2	12	1.0833	0.7930				
	G3	31	1.7097	0.5287				
Own comfort discussing:								
menstruation	G1	22	1.0909	0.8112	63	0.0762	0.9268	
	G2	12	1.0000	0.7385				
	G3	30	1.1000	0.7589				
dating and boyfriends	G1	22	1.0455	0.7854	64	1.8890	0.1598	
	G2	12	1.0000	0.8528				
	G3	31	1.3871	0.6672				
sexual intercourse	G1	22	0.4545	0.6710	63	2.3600	0.1030	
	G2	12	0.2500	0.6216				
	G3	30	0.7333	0.7397				

conception	G1	22	0.9091	0.8112				
	G2	12	0.6667	0.8876	63	1.9413	0.1523	
	G3	30	1.1667	0.6989				
birth control	G1	22	0.7727	0.7516				
	G2	12	0.5833	0.7930	63	3.6095	0.0330*	G2<G3
	G3	30	1.1667	0.6477				
morality	G1	22	0.7727	0.8691				
	G2	12	0.8333	0.7177	64	1.4675	0.2383	
	G3	31	1.1290	0.7634				
Mother or daughter's comfort discussing:								
menstruation	G1	22	1.2273	0.8125				
	G2	12	1.0000	0.8528	63	0.9687	0.3854	
	G3	30	1.3667	0.7184				
dating and boyfriends	G1	22	1.1364	0.7102				
	G2	12	0.8333	0.7177	64	1.5029	0.2305	
	G3	31	1.2581	0.7288				
sexual intercourse	G1	22	0.6364	0.8477				
	G2	12	0.3333	0.6513	63	2.8367	0.0664*	G2<G3
	G3	30	0.9333	0.7397				
conception	G1	22	0.9091	0.8679				
	G2	12	0.6667	0.7785	63	1.8409	0.1674	
	G3	30	1.1667	0.7466				
birth control	G1	22	0.8636	0.8888				
	G2	12	0.6667	0.7785	63	1.1578	0.3210	
	G3	30	1.0667	0.7397				
morality	G1	22	0.9545	0.9545				
	G2	12	1.0000	0.9535	64	0.5820	0.5618	
	G3	31	1.1935	0.7492				
Rathus assertiveness	G1	22	-8.8636	28.9109				
	G2	12	10.6667	26.4036	64	2.8326	0.0665	
	G3	31	7.1935	27.1384				

APPENDIX Q

t test

COMPARISON OF ALL THE DAUGHTERS, GROUP 1C AND GROUP 3C

	Group 1C			Group 3C				
	n	mean	s.d.	n	mean	s.d.	t	p
Foothills sexual knowledge	34	10.6176	2.861	31	8.6452	3.601	2.46	0.017*
Honesty in answering	34	3.4412	0.613	31	2.9032	0.651	3.43	0.001*
Age	34	16.5000	1.108	31	14.5806	2.013	4.82	0.000*
Closeness to mother or daughter	34	1.2059	0.729	31	1.7097	0.529	-3.16	0.002*
Own comfort discussing:								
menstruation	34	1.0588	0.776	30	1.1000	0.759	-0.21	0.831
dating and boyfriends	34	1.0294	0.797	31	1.3871	0.667	-1.95	0.055
sexual intercourse	34	0.3824	0.652	30	0.7333	0.740	-2.02	0.048*
conception	34	0.8235	0.834	30	1.1667	0.699	-1.77	0.082
birth control	34	0.7059	0.760	30	1.1667	0.648	-2.59	0.012*
morality	34	0.7941	0.808	31	1.1290	0.763	-1.71	0.092
Mother or daughter's comfort discussing:								
menstruation	34	1.1471	0.821	30	1.3667	0.718	-1.13	0.262
dating and boyfriends	34	1.0294	0.717	31	1.2581	0.729	-1.27	0.207
sexual intercourse	34	0.5294	0.788	30	0.9333	0.740	-2.11	0.039*
conception	34	0.8235	0.834	30	1.1667	0.747	-1.72	0.090
birth control	34	0.7941	0.845	30	1.0667	0.740	-1.36	0.177
morality	34	0.9706	0.904	31	1.1935	0.749	-1.08	0.286
Rathus assertiveness	34	-1.9706	29.224	31	7.1935	27.138	-1.31	0.196

APPENDIX R

PEARSON CORRELATION COEFFICIENTS

PAIRED MOTHER AND DAUGHTER RESPONSES RELATED TO COMFORT AND ASSERTIVENESS FOR GROUP 1 AND GROUP 3

Variable	Group 1 (n=22)	Group 3 (n=31)
closeness to mother or daughter	0.1030	0.1930
own comfort discussing:		
menstruation	0.5636*	0.1770
dating and boyfriends	0.1430	0.1950
sexual intercourse	0.4915*	0.3954*
conception	0.5437*	0.2233
birth control	0.5815	0.2804
morality	0.1175	0.2630
mother's, daughter's comfort discussing:		
menstruation	0.5227*	0.4580*
dating and boyfriends	0.3209	0.1714
sexual intercourse	0.3022	0.6568*
conception	0.3608	0.6017*
birth control	0.4966*	0.4672*
morality	0.2742	0.3070
rathus assertiveness scale	0.5018*	0.5600*

APPENDIX S

FREQUENCY AND PERCENTAGE DISTRIBUTION

RESPONSES RELATED TO GENERAL COMMUNICATION
FOR GROUP 1, GROUP 2 AND GROUP 3

I think most parents find it easy to talk to their teenagers about sexuality.

	GROUP 1		GROUP 2	GROUP 3	
	Daughter	Mother	Daughter	Daughter	Mother
yes	(2) 9.1%	(3) 13.6%	0	(7) 22.6%	(6) 19.4%
no	(20) 90.9%	(19) 86.4%	(12) 100%	(24) 77.4%	(25) 80.6%
n	22	22	12	31	31

I think most parents find it easy to talk to their teenagers about birth control.

	GROUP 1		GROUP 2	GROUP 3	
	Daughter	Mother	Daughter	Daughter	Mother
yes	(6) 27.3%	(6) 27.3%	(1) 8.3%	(11) 35.5%	(8) 25.8%
no	(16) 72.7%	(16) 72.7%	(11) 91.7%	(20) 64.5%	(23) 74.2%
n	22	22	12	31	31

Did you discuss birth control with your mother before your first experience with intercourse?

	GROUP 1		GROUP 2	GROUP 3	
	Daughter	Mother	Daughter	Daughter	Mother
yes	(2) 9.1%	(1) 4.5%	(4) 33.3%	(3) 9.7%	(3) 9.7%
no	(20) 90.9%	(17) 77.3%	(8) 66.7%	(1) 3.2%	(21) 67.7%
no answer				(27) 87.1%	(7) 22.6%
n	22	22	12	31	31

Did you discuss birth control with your mother after your first experience with intercourse?

	GROUP 1		GROUP 2	GROUP 3	
	Daughter	Mother	Daughter	Daughter	Mother
yes	(3) 13.6%	(1) 4.5%	(3) 25.0%	(3) 9.7%	0
no	(19) 86.4%	(17) 77.3%	(19) 75.0%	(1) 3.2%	(24) 77.4%
no answer				(27) 87.1%	(7) 22.6%
n	22	22	12	31	31